Rural Cemeteries, No. 2. Planting, &c.

Art, Glory, Freedom, fail, but
Nature still is fair.—Byron.

What trees may best adorn the mountain's brow,
And spread promiscuous o'er the plains below?
What, singly, lift the high-aspiring head,
Or, mix'd in groups, their quivering shadows shed?
What best in lofty groves may tow'r around,
Or creep in underwood along the ground;
Or, in low copses, skirt the hillock's side,
Or, form the thicket, some defect to hide?
I now inquire.

THE remarks in a former article respecting iron railings, materials for monuments, &c., apply with force to the selection of trees for a rural cemetery; they should be of a permanent kind, but, as they will grow while the other improvements are perishing, and may attain either a moderate or a great height and bulk of body, discrimination is eminently required. The planter must look forward to future years. Those trees which may be entirely suitable for ground not intended to be used for interments may be utterly unfitted, by their manner of growth, for a family lot. As instances of this difference, we may cite two of evergreen, and two of deciduous habit. The hemlock may do very well for either situation; in a lot it will, without annual shortening, lose its lower branches, grow up, and overshadow the spot; without its lower limbs, it is an eminently handsome tree; the Norway fir, on the contrary, has lost its principal beauty when its "feathering near the ground" is removed; this feathering soon increases to such an extent as to cover any moderate lot; when a tombstone or a monument is to be erected, it becomes necessary to remove its chief attraction. The same remarks will apply to the Cedar of Lebanon, and many others; the rule being established to plant, in individual property, only those trees which grow upwards without low-spreading limbs, or trees which sweep from the top downwards, of which there is now a considerable list, no difficulty will be experienced; the company should adopt trees *with* lower branches, for variety and effect, where the situations are suitable to receive them. Deciduous trees, like the Buttonwood or the native Chestnut, would interfere by their bulk, and their large roots, with individual improvements, while they would be eminently proper in many sites not to be inclosed by individual owners. This rule will be perfectly understood on a little examination, and is a very important one in the first laying out of the grounds of a cemetery.

Again. Low, round-headed trees will be more permanently ornamental in individual cemetery property than those of tall or fastigiate habit; the Norway or Black Maple is one of the most decided ornaments of a burial plot; it spreads, in the most beautiful manner, over a large space, while its shade is perhaps the most impenetrable of any we have; the Lombardy Poplar, on the con-

trary, would be in bad keeping with a monument or a tombstone, by overtopping them, reducing their apparent height, and yielding little or no shade below. Here will be observed a distinction which we are anxious to impress on those interested. With these simple rules remembered, and a knowledge of the habits of trees, it will be an easy task to plant a Cemetery with a due regard to the individual holdings as well as the company's duty of giving a finish to their department, which will consist, as before remarked, in planting the boundaries as well as the borders of the roads, and those spots not suitable, or likely to be wanted, for interments.

We shall now proceed to give a list, 1st, of evergreen-trees suitable for general purposes, to be planted by the company; 2d, of deciduous kinds; 3d, trees and shrubbery for individual planters; 4th, the best and newer weeping kinds that may be admitted with propriety and effect; 5th, a list of hedge-plants, to supersede the necessity of iron for inclosures; and 6th, vines suitable for individual lots, &c.:—

I. EVERGREEN-TREES SUITABLE FOR GENERAL PURPOSES, TO BE PLANTED BY THE COMPANY.

Norway Spruce Fir,
Hemlock Spruce,
The Cedar of Lebanon, and the *African Cedar*,
The Pinaster,
The Cephalonian Pine,
The Weymouth Pine,
The White Spruce Fir,
The Black " "
The Balm of Gilead; if this is planted in the youth of the cemetery, it will, in twenty years, serve as a tree to be thinned out and destroyed, and, answering for present effect, is useful.
Cryptomeria Japonica; a very desirable evergreen for cemeteries; not entirely hardy at the North.
Abies Douglasii,
" *Morinda*,
Pinus Benthamiana,
" *Sylvestris*,
" *Gerardiana*,
Pinus Lambertiana,
" *cembra*,
" *monticola*,
Picea pinsapo,
" *pichta*,
" *nobilis*,
" *amabilis*,
" *spectabilis*,
" *Fraserii*,
" *Menziesii*,
and others. At the South, and perhaps in the Middle States, the Sequoia Gigantea, or Great Tree of California, should not be forgotten.
Podocarpus Japonica resembles the Irish Yew, with larger foliage, and is perfectly hardy. We could name many others, but a little study will give a longer list of trees of similar habit with the above, as well as those that follow.

II. DECIDUOUS TREES FOR THE SAME PURPOSES.

Oaks; all the varieties, but, especially, the Overcup and the White Oak.
Magnolia macrophylla, or long-leaved magnolia,
" *conspicua*,
" *acuminata*,
" *cordata*,
" *auriculata*, *&c.*,
all the family that are hardy in your latitude.
Tulip-tree,
American Lime-tree, or *Tilia*,
Maples; most of these should be employed, but, as in the case of the single lot-holder, we recommend the Acer Platanoides, or Norway, especially.
The common Horse-Chestnut, and the Red and Double Chinese. The Buckeye loses its leaves too early in the autumn.
Virgilia lutea, or Yellow Wood,
All the Robinias, or Locusts,
Kentucky Coffee-tree,
The Judas-tree,
The Florida Dogwood,
The Buttonwood, for some sites, would make a fine boundary,
The Mountain Ash,
The Ash-trees,
The Copper, and other Beeches,
The Sassafras, in groups of three and five,
The Elm, and, especially, the *Slippery Elm*, the latter forming a beautiful head,
The Hickories, on high ground,
Weeping Willows, in dells, &c.

The Aspen,
The Lombardy Poplar, in selected spots,
The White and Paper Birches,
The Liquidambar,
The Ginko tree,
European and American Larches,
Deciduous Cypress,
White Fringe tree,
Laburnum,
Tulip-tree.

III. TREES AND SHRUBS SUITABLE FOR INDIVIDUAL PLANTERS.

Dwarf Oaks,
Magnolia grandiflora, or Evergreen,
" The *Glaucous,* or Swamp,
" *tripetela,* or Umbrella-tree,
" *conspicua,* or Chandelier-tree,
" *purpurea, and Soulangeana,*
Berberries,
Mahonias,
Stuartia Virginica, and Marylandica,
Gordonia pubescens (formerly Franklinia).
The Black, or *Norway Maple;* no tree will produce a better head, or a more impenetrable shade, and, as it does not attain a great height, there is no more suitable large tree for a single lot.
Dwarf Horse-Chestnut,
Kölreuteria paniculata,
The Hop tree,
The Bladder nut tree,
Japan Euonymus, Evergreen,
The Hollies,
Venetian Sumac, or Mist-tree,
Virgilia lutea, or Yellowwood,
Spanish Broom,
The Laburnums,
The Rose Acacia,
The Bird Cherry,
Roses; select the hardiest ever-blooming kinds.
The Common Ivy will spread gracefully over a lot, instead of grass, but is found, in practice, to collect the leaves in winter, and they prove difficult to displace.

The Rhododendrons, &c., which we should recommend, would be
Kalmia Latifolia, or Common Laurel,
Rhododendron maximum, } succeed in the
" *catawbiense,* } shade.
" *ponticum,* }
These are superb bloomers, and beautiful evergreens in addition. When they attain considerable size, nothing can be more desirable.
The Common White Jasmine, and the nudiflora,
The Periwinkles are admirably adapted to cover the surface of graves, and to trail over the grounds.
The Halesias, or Snowdrop trees,
The Fringe tree,
The Copper Beech,
The Silver, Variegated, and *Golden,* and the common *tree Boxes,*
Cryptomeria Japonica,
Pinus pumilio,
Juniperus Suecica,
" *Hibernica,*
" *Sabiniana,*
" *Chinensis,*
" *pendula,*
The Yews,
Deutzia gracilis,
The Spireas,
The Tamarisks,
Wiegela Rosea and *Amabilis,*
The Mahonias,
The Forsythia viridissima.

IV. WEEPING TREES FOR INDIVIDUAL LOTS, ETC.

Sophora Pendula, or Weeping Sophora,
European Weeping Ash,
Weeping Golden Ash,
" *Mountain Ash,*
" *Birch,*
" *Beech,*
" *Larch,*
" *Elm,*
" *Oaks,*
" *Poplars,*
" *Linden,*
" *Laburnum,*
" *Thorns,*
The Lentiscus Weeping Ash,
Fraxinus lentiscifolia pendula is a fine-spreading, and somewhat drooping tree, well worthy of a place.

The Weeping Sophora, first on this list, one of the most remarkable and elegant of the drooping shrubs, is but little introduced, but we are convinced that, when it is more generally known, it will be much employed in cemeteries. The round head, and deeply-weeping, long, slender, green shoots, are quite ornamental, both in summer and winter. The foliage and flowers resemble somewhat the White Locust and the Laburnum. It could be procured in quantities from Europe, at very moderate cost, and will be, when it becomes known, extensively propagated here, where it is quite hardy.

V. HEDGE-PLANTS SUITABLE FOR THE INCLOSURE OF CEMETERY LOTS.

The American Holly will be the first choice of all who can procure it, both for its beauty and durability.

The Junipers will form a very beautiful and suitable hedge, south of Pennsylvania.

Arbor Vitæ, both Chinese and American, Golden, Oriental, Tartarian, and Japan, are highly suitable and ornamental for lots, especially the latter, but require annual shearing.

The Siberian Arbor Vitæ is particularly suitable for a cemetery hedge; of slow growth, compact habit, and requires but little trimming.

The Hemlock, treated as a hedge-plant, would be exceedingly ornamental.

The Yews, but, especially, the upright, or Irish variety.

The Buckthorn, and Berberries.

Honeysuckles, carefully attended to, are graceful and proper, particularly the Chinese Evergreen.

The Tree-Box is of slow growth, hardy, and truly superb as a cemetery hedge, requiring less attention than any other.

The Savin, with its dark-green foliage, is only second to the above.

The Evergreen Privet.

The Lilac, Syringa, Pyracantha, Snowball, and similar straggling plants, should never be allowed.

VI. VINES SUITABLE FOR THE ADORNMENT OF INDIVIDUAL LOTS.

The Clematis; most of the varieties, but, especially, the Sweet Scented, which will cover a monument or inclosure with its delicate tendrils and flowers in the most beautiful manner.

The Sweet Scented, or Male Grape, will run over a tree or large shrub, and annually produce its regale of delicious odor.

The Wistarias may be used, with caution, where there is a large space or railing to entwine.

BULBS, &c.

Lily of the Valley,
Christmas Rose,
Monkshood,
Sweet Violets,
Lilies, Phlox, &c.

FOR COVERING GRAVES.

Periwinkle, or Vinca minor, forms a beautiful evergreen for the hillock over a grave. A little attention in keeping free from grass and weeds will give an entirely satisfactory mound.

Moneywort and Ivy.

VINES AND SHRUBBERY FOR GENERAL PURPOSES.

The Trumpet Flowers, American and Chinese, to mount the larger trees.

Ivy, the Giant, ditto; the English is hardiest.

" Three-Fingered, ditto.

Aristolochia, or Birthwort,

The Fragrant Wild Grape,

The Evergreen Honeysuckle, and other varieties.

Jasminum Officinale, the White Jasmine.

The Yellow Jasmine, south of Philadelphia, would be eminently suitable for both the public and private grounds.

In the Southern States, there are many additions to these lists that will strike the planter there; our observations are made principally for the latitude of Philadelphia, but apply, in the main, to both North and South.

We find the subject has grown upon us so much that a third article will be necessary. We shall give a list of trees, shrubs, and plants, that will succeed under the shade of trees, a desideratum to many in private gardens; with a few additional remarks pertinent to the subject of cemeteries.

KING APPLE, N. Y.*

Tree of most vigorous growth, with stout limbs; bark greenish-brown, more colored in the young shoots. *Leaves* thick, large round-oblong, slightly serrated and downy beneath. The form is handsome, and this variety seems to be hardy and suited to most of our soils. *Fruit* large, round or sometimes obovate, slightly ribbed towards top. *Stem*, half an inch long, inserted in a deep smooth basin. *Eye* small, not deeply sunk, in an irregular cavity. *Core* large, seeds middle sized, differing in form and size, some abortive, in spacious capsules. *Skin* smooth, glossy dark-red with stripe of a darker red when about ripe, and covered with fine marblings of the same hue. *Flesh* firm, replete with juice; of a brisk, sprightly, vinous subacid, with sufficient sugar and flavor, making it a very refreshing fruit. Keeps well, ripens slowly, and lasts as far as April. Indeed, one of our most valuable winter apples. The fruit has much of the Esopus Spitzenburg character.

RESTALRIG HOUSE, RESIDENCE OF G. G. LOGAN, ESQ., AT GERMANTOWN, PA.

BY R. MORRIS SMITH, ARCHITECT, 74 SOUTH FOURTH STREET, PHILADELPHIA.†

BEFORE venturing to contribute another design to the *Horticulturist*, it may be well to say a word of apology for my last little contribution (April), which was so unfortunate as to be "walked into" by the formidable "Jeffreys."

"Jeffreys" expresses his anxiety lest our "house architects" should run into extremes as to the quantity of outside wall employed to inclose a given amount of inside accommodation, and asks: "Why not have the outer walls inclose double instead of single rooms?" thus "getting MUCH more space at FAR less cost," &c. If Jeffreys will look again at the plan, he will perceive that there is provision for double chambers over the PARLOR. On the OTHER side of the hall, there are only two ways to get a double instead of the single room; first, by ADDING a room above, and one below stairs, *retaining* the back-building, and, secondly, by omitting the back-building, and making a double room in place of the single one, *the rear half doing duty as a kitchen*, thus drawing the kitchen into the main building. Is it possible that "Jeffreys" would recommend the latter course to any one who could afford the comfort of a back-building kitchen? There would, undoubtedly, be a saving thus effected, but it would be emphatically one of the description known as "dear savings." I am perfectly willing to admit that the rooms generally would be "warmer" (especially in summer) by this arrangement. I will go further, and grant that they would be much more *odoriferous*. But I cannot suppose the people of America so far behind the age as generally to build in a mode obsolete in this vicinity for twenty years, and now only used in the cheapest farm-houses, and must, therefore, suppose that "Jeffreys'" saving is to be effected in the first-mentioned way—that is, by ADDING two rooms, one above, and one below stairs! Really, the economy of such a procedure by a family who didn't want the two extra rooms is difficult to appreciate. Every one who has the slightest acquaintance with building of course knows that these extra rooms would be obtained at a less *proportional* cost than the rest, and this, no doubt, is what "Jeffreys" intends to convey, but, if he had read the descriptive article (I am perfectly aware of, and do not wish to infringe the time-honored privilege, the almost prescriptive right of critics, *not to read* the productions they select for the

* See Frontispiece of August number.

† This article was intended for the last number, to accompany the engraving, but was crowded out.—ED.

exercise of their acumen, but still, I say, if, as an act of condescension entirely, he had read the article), he would have found that the house is therein described particularly as an attempt to obtain, at a minimum cost, accommodation for a *small* family requiring only the *given* number of rooms, for whom to have increased that number, and with it (though in a less proportion) the cost, would have been like the economy of the boy who fills his pockets with cheap things he does not want, BECAUSE they are cheap. As for the flat cornices (which "Jeffreys" comically calls "water-tables!" and which, he informs us, "subject the roof-water to detention and frost, and, in consequence, to leakage, which will stain and injure the walls!"), is it possible he can be ignorant that this description of cornice (with a sunk gutter formed in it just outside the wall, and below the rake of rafters) is universally in favor for use with flat tin roofs, *for the express purpose of preventing the leakage* which is apt to occur in such roofs with the ordinary roof-gutter, owing to its backing the water up on the roof. Further on, he expresses his disapprobation of the "reform in architecture," and his belief that, in ten years, the public will return to the "old-fashioned square house." I hope "Jeffreys" is not going to embark his ability and information, as an architectural critic, in a crusade against the reform in architecture, and undo the earnest labors of Downing, and many others, by throwing us back to the old-fashioned square house.

As to the plan in the last number, there is little to remark in it beyond the attempt, by the peculiar dormers (which are uncommonly pleasant internally), to give a picturesque variety to the stale outline of the "old-fashioned square house." The roof-water, from the bay between the dormers, is conducted by a lead-pipe built into the wall down to the veranda-roof. That from the corner bay, by the usual corner conductor, to the ground. The rest of the roof-water is collected in a cistern, which gives a head in every room in the house. The plan is a slight variation on the "old-fashioned square house," and ought, therefore, to propitiate "Jeffreys." The proportions of the rooms are not quite as I could have wished to have had them, the plan being, in some measure, imposed upon me by the circumstance of the house having been already commenced when I was called to superintend it. It possesses, however, the compactness, and a certain dignity, which "Jeffreys" rightly ascribes to the old square form of house. The want of length in dining-room is somewhat compensated by its capability of being thrown into one with the library; the bay-window is uncommonly effective; internally, the pantry is convenient, and it is altogether a very enjoyable house. It might be built cheaply, or moderately, for from $5,000 to $8,000. As executed, it stands on a noble ancient manor, near Philadelphia.

ROOTS.

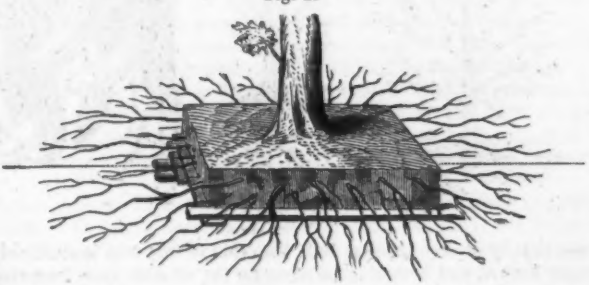
IN a former number, page 71, we commenced to make some remarks on roots, a subject which has more interest, perhaps, to the planter than any other, but which is very generally neglected; carelessness marks the *placing* of the part on which the vitality of the tree is mainly to depend. A critic remarks, on the continually absorbing power of the roots, that the simile of a wick of a candle is certainly one of the most appropriate. The wick (as well as the spongioles of the root), by its hygrometric quality, conducts fluids to the flame, only the spongioles, being continually renewed by their constant formation onwards, are permanent. If cut, they will bleed, and occasionally discharge sap in abundance. A case is mentioned of a very fine birch-tree, whose roots were cut through in making a new walk near it. They were about five in number, and averaged about an inch and a half in diameter, and continued bleeding so incessantly for a fortnight, that

the walk, at the end of that time, stood in puddles, and the sap still bubbled up through the gravel. On examining the roots with an ordinary microscope, the discharge will be found to proceed from the whole of the exposed cells through the section, and bubbles of air are frequently formed on the cut surface, evidently showing that some kind of gas was present, either in the sap or in the cells.

Such cases are doubtless much more common than is supposed. The sunflower, bulk for bulk, imbibes and perspires seventeen more times fresh liquor than a man, every twenty-four hours. A tree may be assumed to be a combination of hollow tubes, freely communicating with each other, and inclosed in a skin through which fluids are capable of being absorbed on the one hand, and expelled on the other. If we conceive a body of this kind, in which the tubes are nearly empty, to have its lower extremity plunged in water, the absorbing power of the skin at that part will begin to introduce the water into the interior, and this continuing to go on for a sufficient time, the tubes must necessarily become at last filled with water, rising up from below. To effect this, no attracting force at the upper end of the cylinder was necessary; every particle of water which was absorbed by the lower end having driven before it a corresponding volume of the water previously existing in the apparatus. Under the influence of this operation, the tubes would in time become full, and if unelastic, the introduction of more water would be impossible. But if such tubes, and the skin that incloses them, were elastic and extensible, then any such quantity of water might be introduced as the apparatus could receive without bursting. If we, then, suppose that the one end of the apparatus were cut open, the sides of the tubes would collapse, and the water would be forced out till there was no more left than the tubes held in their original unstretched condition. A tree is just such an apparatus. Its tubes are nearly empty at the fall of the leaf. During winter, the roots absorb water, and fill the tubes again. By the arrival of spring, they are filled almost to bursting, and then, if the stem is cut, it bleeds; or, if the roots are cut, they bleed. Bleeding ceases as the leaves unfold. The vine, the walnut, and the birch, are all as incapable of bleeding as other trees, when their leaves are formed; because the leaves gradually empty the tubes, put an end to their distension, and prevent its recurrence as long as they remain in an active state.

The excessive loss of sap would not have taken place if the roots had been wounded or cut in the summer or autumn. In the adjoining cut (Fig. 1) is represented a tree ready for removal, with the rootlets carefully preserved from injury, which should be done whenever practicable, but in practice these rootlets are too often destroyed; and, in that case, it would have been better to cut them while the tree had its leaves on it the summer previous to the intended removal.

Fig. 1.



There is no period of the year when the roots become altogether inactive, say Professor Lindley

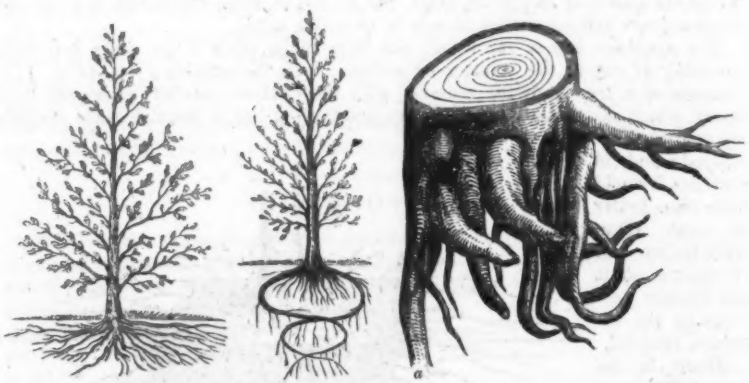
and other authorities, except when they are actually frozen. At all other times during the winter, they are perpetually attracting food from the earth, and conveying it into the interior of the plant, where, at that season, it is stored up till it is required by the young shoots of the succeeding year. The whole tissue of a plant will therefore become distended with fluid by the return of spring, and the degree of distension will be in proportion to the mildness and length of the preceding winter. As the new shoots of spring are vigorous or feeble in proportion to the quantity of food that may be prepared for them, it follows that the longer the period of rest from growth, the more vigorous the vegetation of a plant will become when once renewed, if that period is not excessively protracted.

No plants which are expected to attain a large size should ever be grown in pots, but should be treated on the same principle as our common forest-trees, with this difference, that they never should be allowed to remain more than two years, and, in some cases, not so much, without being transplanted, by which means the main roots would radiate naturally from the common centre, as in Fig. 2, and become sufficiently numerous to insure a ball of earth to adhere to them. Plants would thus be furnished of a very superior quality, and at a much cheaper rate than those mutilated and expensive deformities nurtured in pots.

In our next figure (Fig. 3) is represented a tree circumscribed by the limits of pot culture. In the former, the roots are extending in all directions near the surface in search of food; in the latter, they have a direct tendency downwards, where they neither can derive food, nor, from their position, have the same effect as the former in maintaining the perpendicular position of the tree. Camellias will be found in such and worse conditions, where care has not been taken at shifting to disentangle them, and afford them more space for their horizontal extension.

Our next figure (Fig. 4) shows the state of a fruit or forest-tree, subjected, in early life, to pot culture; where the roots have been most confined and contorted,

Fig. 2. Fig. 3. Fig. 4.



the supply of sap thrown into the side of the tree immediately above them has been limited and irregular, as seen by the smaller and irregular portions of the annular rings in the transverse section of the trunk; whereas, again, where the

root, *a*, has had the means of penetrating deeper into the soil, and, consequently, been able to collect a greater amount of sap food, the annular rings above it are larger, and more uniform in size. Sickliness, deformity, and premature death are the results. The greatest care should be employed, in planting such a specimen, to disentangle and spread the roots carefully. The Cedar of Lebanon is frequently planted from pots, and this is one reason we see such poor specimens in this country.

Fig. 5.

Where the corkscrew, or spiral direction has been once taken by the roots, they are very apt to retain it during their lives; and if, when they have become large trees, they are exposed to a gale of wind, they readily blow out of the ground, as was continually the case with a number of rare evergreens formerly kept for sale in pots. To prevent the possibility of this occurrence, it is a good plan to place trees intended for transplantation in old baskets. Through their wicker sides the roots readily penetrate, and when this has happened, the half-decayed baskets are lifted, and "potted" in other baskets, of a larger size.

The adjoining cut (Fig. 5) is a sketch of a root of a Laricio after having been planted ten years, illustrating the effects of corkscrewing better than any description.

VISITS TO COUNTRY PLACES, NO. 2.
AROUND NEW YORK.

TAKING a carriage at New Brighton, we first called upon Mr. William Chorlton, an esteemed correspondent, gardener to John C. Greene, Esq. Mr. Chorlton has under his charge twelve acres, two acres of which are vegetable garden, four acres pleasure-grounds, consisting of lawns, flower-bed, and shrubberies, and six acres of pasture-land and meadows, that supply three cows with food the year round. The whole is in the nicest order, sufficiently so to satisfy the most fastidious. The views of the Bay of New York are exquisitely beautiful, and advantage is judiciously taken, in the planting, to conceal defects, and open the finest vistas. Altogether, the scene about the house presents an appearance of rural luxury and ease, and though so near to neighbors as the place is, it is, for all purposes of privacy, complete.

There are four plant houses, from which are produced a very fine show of regular succession flowers. The camellia house is seventy-eight feet long, and is filled with large and fine plants, from which were cut, last winter, some four thousand flowers. The vineries are devoted to the grape entirely, and produce an average of 1,500 pounds of the finest quality, which have always taken the first prizes

when exhibited. Including cold frames, in which are grown Neapolitan violets, and many other fragrant plants, there is, at Mr. Greene's, a total of 8,000 square feet of glass. Mr. C. cuts the lawns every two weeks, excepting in very severe droughts, and we found them in the highest keeping. Beyond a doubt, there might be a great saving of labor, here as elsewhere, by employing H. N. Swift's improved lawn-mower, made by him at Fishkill Landing, New York, respecting which we shall have more to say hereafter. For this amount of ground and glass, Mr. C. has, besides himself, two regular assistants, and two others for about eight months. The whole produce of this highly beautiful place is made use of by the proprietor's family, excepting a liberal supply which he generously distributes among his friends, but, were it to be sold, Mr. Chorlton has no doubt the aggregate value would amount to 3,500 or 4,000 dollars annually, at wholesale prices, besides the grounds being always kept in the nicest order. Here are valuable results for imitation, exhibiting Mr. Chorlton in the character of a master of his business. Mr. Greene resides here only during the summer.

We next called at the country residence of J. Q. Jones, Esq., whose gardener, Mr. Edward Decker, also occasionally enlivens our pages with his facts. The place is small, being about an acre and a half, but it is "well tilled, and well filled." There are two small plant-houses, and a quantity of frames, that supply abundance of winter salad, and a very good quantity of succession flowers; the vegetable department is about one-half acre, but from this small plot is obtained enough of the finest edibles for the use of the family. The remainder is lawn, shrubs, and flowers, which is kept in admirable condition, and does great credit to the gardener, who is a talented and persevering man, well qualified for the charge of an extensive establishment. He has a little assistance in spring, but manages by himself the remainder of the year. Mr. Jones's place has an air of domestic comfort and family repose highly attractive. These two places are within walking distance of the New Brighton ferry.

We next called at the place of ——— McCall, Esq. (John Nichol, gardener). This spot has become one of the most improved in the neighborhood. The owner has not hesitated in making a judicious outlay. He encountered many difficulties from the nature of the situation, which is rather low, but, with effectual drainage and good and deep tillage, these difficulties have been surmounted, and his success is proof of what may be accomplished in many similar cases. Here we found a good vegetable garden, a fine collection of fruit-trees, with a well kept lawn, and flowers and shrubbery. There is also about 6,000 feet of glass, consisting of a small conservatory attached to the dwelling, a warm greenhouse, forty feet in length, and a newly erected range of four connected houses, divided into two graperies and two plant-houses; the whole, extremely convenient and artistic, were designed by Mr. Chorlton, the object being to combine utility with beauty in appearance, which in this case has been accomplished, the structure being one of the handsomest we have lately seen. It was quite new—the grapes lately planted, and the greenhouses nearly unfurnished. When filled, the "expression of purpose" will add materially to the effect.

After calling on some friends, who were all in the pursuit of horticultural projects, looking over their newly-planted trees, or projecting new structures, we called at "the Cedars," the country residence of a schoolmate in days gone by, Samuel T. Jones, Esq. His place is on very high ground, overlooking, from the drawing-room windows, the bay and city of New York, and, from the dining-room, the ocean is seen in the distance, with Long Island, and the intervening waters and islands, at your feet; altogether one of the loveliest spots on this or any other island. Mr. Jones has left, with good taste, the original growth of wood, consist-

ing mostly of the native cedar, which here assumes an erect and highly beautiful form; the roads and walks are in fine condition, and the lawn promises soon to be such as any one might envy. We think Mr. J. should employ the improved lawn-mower, in order to economize time. His specialities are grapes and a fruit garden, and certainly there is no better example than both exhibit. His large grapery is a "Lean-to" to the house, and produces, with his own and his gardener's care, as fine grapes as are ever eaten. The border outside is an example of extreme neatness. Fruit from this house we have partaken of in former years, when we thought nothing *could be* finer.

The fruit garden here is a model which we should like all our amateur friends to imitate. The peach-trees are of sixteen years' growth, and enormous specimens, some on espaliers, and others in the open ground, but headed back annually. The pears, dwarf and standard, receive the best treatment; these, and the peaches, have scarcely felt the last severe winter, and give promise of a good crop; both pears and peaches receive spring and fall dressings of guano—a handful to a small tree, and more to a large—mixed with plaster; this is dug in in the fall, and the whole covered all winter with a good mulching of stable manure. Here is the whole treatment; we venture to say, no garden in America can exhibit better fruit, which is so abundant, that it has often to be buried in the earth to prevent its becoming a nuisance! With the New York market so near, this should not be; better give it away than destroy it. The whole garden here is dug over before winter, and left in its rough state for the frosts to plough through the ground and pulverize it.

We could dwell long on the beauty of these Staten Island sites, the kind and generous hospitality of its inhabitants, describe Mr. Aspinwall's noble mansion and fine views, but we are called to visit the beauties of the North River, and, in these hasty remarks, must endeavor to be concise.

TREATMENT OF WINTER PEARS.

BY D. S. DEWEY, HARTFORD, CONNECTICUT.

It is now generally conceded, I believe, that the pear world *does* "move." Seeing is believing, so far as it goes; eating, is proof positive. Delicious winter pears *are raised;* not merely as "tasters," by the half-dozen or so, but by the bushel; and preserved, too, in good condition, for months. But, as scepticism on this subject is not wholly removed from the public mind, and as the subject is one of some importance, additional evidence in the matter may not be deemed unworthy of record.

On the evening of the 22d of February last, a few horticultural friends of the worthy Ex-President of our Society—Alfred Smith, Esq.—met him, by appointment, at his residence, to witness some of the results of his judicious experiments in raising and keeping winter pears. He placed before us a superb collection of the three following varieties: Beurré d'Aremberg, Winter Nelis, and Glout Morceau. They were truly beautiful to the sight, and delicious to the taste, and were not only well developed in color, but also in form, having, apparently, lost but little, if any, of their original fulness of outline.

In answer to the very natural inquiry which immediately arises, as to the cause of such success, I submit the following brief rule, in Mr. Smith's own words: "Pick late, and keep cool."

His practice is to allow his pears to remain on the trees much longer than had generally been supposed advisable.*

His Winter Nelis were gathered until the 20th of November, 1855—Beurré d'Aremburg and Glout Morceau on the 10th of November.†

The fruit is, of course, very carefully handled in picking, and then put into baskets and boxes, and placed in a cool room, over a shed, which can be well ventilated and well closed at proper times. When winter has evidently "set in,"‡ the pears are all carefully examined, and put into boxes,§ say one or two tiers in a box, and removed to a room on the first floor of the dwelling-house, in the northwest corner, adjoining a hall which is always moderately warm. The temperature of this fruit-room, for the present winter, has been about 40°—the average a trifle less.

The Beurré d'Arembergs are on pear stocks (*i. e.*, grafted on old trees), the Glout Morceau on quince, and the Winter Nelis double-worked, the last two being about twelve years from the bud.‖

These pears have gradually ripened, and become in good eating condition—a few every day—for a period of three months. None of them were brought out, to ripen, into a room of a warmer temperature. Mr. Smith's opinion is that the B. d'A. does not need such treatment, although he admits that the Winter Nelis and Glout Morceau might be somewhat improved by it.

One word about another pear, the Beurré Diel. Mr. S. grows this both on pear and quince. The difference, in his opinion, in the quality of the fruit, is not very great. Those on quince are, perhaps, more melting, and of somewhat better flavor; those on pear closer-grained, and later keepers. Some few of his Beurré Diels were preserved through January; in fact, the very last one was eaten on the tenth day of February!

WARDIAN CASE AND AQUARIUM COMBINED.

Not being aware that a fresh-water aquarium has before been connected with a Wardian Case, I beg to furnish you with a sketch of a contrivance combining the two, which I have had in operation for some time.

The apparatus consists of four parts, made of flint glass, with a little cobalt to give it a tinge of blue. Contrivances of this kind are made of various sizes. In the one from which the sketch was taken, the tank which contains the water in

* In this connection, the action of frost; the flow and elaboration of sap, before and after the fall of the leaves; the inspissation of saccharine and preservative particles, as connected with the exudation of aqueous matter; the absorption and exhalation of gases, &c., were briefly discussed, and may form the material of a future communication. Meanwhile, this branch of the subject is particularly commended to the attention of the numerous readers and correspondents of the *Horticulturist*, many of whom are doubtless well qualified to impart much valuable information derived from recent developments and experiments.

† Differences in latitude, and variety in seasons, will bear very materially upon this point.

‡ Pears removed to house 29th of December, 1855.

§ The boxes are mostly round ones, with close-fitting covers; of the form and dimensions of large cheese-boxes.

‖ As regards the Winter Nelis, the *fact*, as above stated, might mislead some as to the *necessity* of its being double-worked. Such, I think, is not the case. It is one of those valuable pears which, in addition to its other good qualities, generally succeeds well, either on pear or on quince, or on both.

which are the aquatic plants, fishes, mollusks, and insects, is about twelve inches in diameter, and about nine inches deep; near the top in the inside is a flange, with a groove, into which runs the condensed water from the bell-glass, which forms the Wardian Case for the ferns, lycopods, &c.; from this groove it descends to the tank below. Into the centre of this vessel I put the glass pedestal. I then cover the bottom with about two and a half inches of fresh, but not very rich, soil, in which I plant my aquatics; I use for this purpose, Valisneria spiralis, Aponogeton distachyon, Nymphæa odorata minor, and N. macrantha. On the soil I put one inch of well-washed flints, or sea gravel, which prevents the insects, or mollusks, from making the water foul. I then introduce the water through a fine rose, to about four or five inches deep, into which I put gold fish (small), or sticklebacks, or any other small fish, mollucks, Succinea putris, Planorbis corneus, carinatus, and marginalis, Cyclas rivicola, and cornea; insects—any species of colymbetes, hygrotes, hadaticus, gyrinus, and several other aquatic genera; care must be taken not to introduce any of the large carnivorous larvæ. I then prepare for introducing the plants proper for a small Wardian Case. I put the soil into a blue glass dish, with a rim at the bottom to keep it steady on the pedestal; this dish is one and a half inch deep by seven in diameter, the soil is raised in the centre about two inches; in this

I plant the tallest ferns or lycopods, and the smaller round the edge of the dish. The ferns I plant are Adiantum capillus veneris, Lastræa dilatata Schofieldi, a beautiful small Yorkshire variety; Asplenium viride and trichomanes; Asplenium fontanum, &c.; Lycopods Wildenovi, umbrosum, stoloniferum, mutabile, densum, and lepidophyllum. When planted, I cover the soil, in imitation of rockwork, with agates and pebbles of any sort. I then give the whole a good watering before placing the dish on the pedestal; the whole is then covered with the bell-glass. One before me at the present time has been standing in a window eight months; the water has never been changed, or any addition made, except a small quantity once given to the ferns, &c., in the dish. Should the water become green, in the summer, a small piece of gutta percha pipe, with a small rose at the

end, will draw off the water, which may be replaced. The bell-glass may likewise be removed, with benefit to the plants, and a sprinkling of water given them.—*Henry Baines, York, England, in Gardener's Chronicle.*

THE WHITE DOYENNÉ PEAR, AND ITS ENEMY.

BY JOHN B. EATON, BUFFALO, NEW YORK.

It has been the custom with us, in Western New York, as far back as my recollection extends, to compare all other pears with the White Doyenné. It has been, by common consent, considered the standard of excellence, and, until very recently, it was by most persons considered as having no equal. Even now, it is with difficulty that any pear is conceded to be its superior.

Such being its reputation here, and it being well known that, while Eastern pomologists found great difficulty in growing it in perfection, they still retained vivid recollections of its many excellences, numberless cultivators planted trees to a greater or less extent, feeling certain that, if the demand at home should not keep pace with the supply, there was always a good price and a ready sale awaiting them in New York.

It being the favorite theory with many cultivators, that the cracking of the fruit was owing to a want of some constituent in the soil, which had been abstracted by long cultivation, it was supposed by many, and asserted by some, that in the deep and fertile soils of the West, it would be many years before the enemy, which had almost driven it from the Eastern orchards, would follow it to the banks of the Genesee and the Niagara. The fact that, in some cases, fair fruit had been produced on trees which had formerly borne only diseased specimens, and which had been subjected to a severe process of pruning, both root and top, and "renovation" of the soil, naturally strengthened this supposition, and many pear orchards have been planted within a few years, some with the White Doyenné alone, and some with a large proportion of this variety.

It is a number of years since the fruit in this vicinity began to give indications of the presence of the disease which had proved so disastrous elsewhere. For some time, it was chiefly confined to individual trees, generally under poor cultivation, or quite neglected. In some cases, the "renovating" system was tried on such specimens, with different degrees of success, and I have known a few trees which were for some years quite free from the pest, after having been well pruned and cultivated.

The disease has been, however, continually increasing. It has been for some years a matter of custom with cultivators who possessed many trees to select from their annual crop a large proportion of cracked and spotted fruit, since it was found that, if all were allowed to ripen together, much fruit, which was stored in an apparently perfect state, was sure to become affected from the contact of that which was unsound.

For two or three years past, I have closely observed the various phases which this malady has assumed, and have made some experiments with trees which were affected, in order to prevent, if possible, the destruction of the crop, but never with entire success. I tried the "renovation" system, to a greater or less extent, on a number of trees. In one case, I effected some improvement in the fruit, but, usually, the application of the various ingredients which were recommended was of no use. During the last season, I examined nearly every fruiting tree that came under my notice, and I cannot now call to mind more than two or three which bore uniformly perfect specimens. Many cultivators with whom I conversed

stated that their fruit was nearly all affected, and rarely one claimed to be even measurably exempt.

The conclusion to which I was forced to arrive was, that the "exhaustion" theory is incorrect, for I have seen many trees fruiting for the first time, and on land which never grew a pear-tree before, bearing cracked fruit under as good cultivation as pear-trees ordinarily require, and far better than they frequently receive. The "running out" theory I have always considered as being more ingenious than plausible, and not sustained by the facts.

The fungus which occasions the disease I conceive to be somewhat similar to that which causes the mildew in grapes, and the minute particles by which it is disseminated being carried by currents of air in contact with the fruit, will account for its rapid increase. The fruit borne by aged or diseased trees naturally affords a more suitable situation for the growth of the fungus than the vigorous and rapidly swelling specimens produced by young, healthy, and highly cultivated trees; and while the former falls an easy prey to its ravages, and becomes so entirely covered with it as to crack in all directions, the latter exhibits but a few spots of mildew upon the surface. It frequently happens, however, that these fruits, which appear but slightly affected when gathered, will be found, when ripe, to have gained a large accession of mildew, and to be utterly uneatable, in consequence of the intense and sickening bitterness with which they are impregnated.

I have found no difference in the liability of dwarf and standard trees to become attacked, although Mr. Hovey, in a late number of the *Fruits of America*, gives it as the result of his experience that the fruit on dwarf-trees remains unhurt, while that on standards, in the immediate vicinity, is destroyed.

This is already a serious matter, involving the loss of large sums to those who have planted largely of the White Doyenné, and a remedy is of great importance. Who can discover one? It is an established fact, that the fumes of sulphur are of great benefit in preventing the ravages of the mildew in graperies, but it would be no easy matter to fumigate an orchard, or even a single large tree, effectually.

Shall we have a remedy? or must we abandon the White Doyenné? I confess to a desire to see this subject discussed by more experienced pear-growers, and to know the results of their experiments.

Remarks.—The White Doyenné, in Pennsylvania, became utterly worthless long before we heard of its injury nearer the sea, in New York City and neighborhood. Some fruit of our own was as hard as a ripe walnut, cracked, shrivelled, and unworthy the patronage even of a pig; "renovating the outcast" produced no more good than confining an old rogue in the penitentiary. Not discouraged, we planted young, vigorous standards, and the result, with the best cultivation, was the same as Mr. Eaton has described. Has the salt air anything to do with this? Will salt at the root, in suitable quantities, do anything for this as it has for some other fruits. We advise a trial, and know no better experimenter than our correspondent. There is no proof that fungi exist in solutions of sulphur; seeds will vegetate in crude sulphur, but this is insoluble in water; in an impalpable powder, it is a deadly poison to those parasitic moulds which grow on the vine, the hop, the peach, and the rose, &c. Pereira says that a few grains of sulphate of soda, put into a bottle with a fermentable juice, are equally efficacious, the acid decomposing the salt, which evolves sulphurous acid. Bisulphate of soda destroys the curious vegetable production which attacks the stomach. Caustic soda is efficacious in the case of fungi, which attack cereals; the combination of carbonate of lime with sulphate of soda, by which caustic soda is set free on the combination of the sulphuric acid with the lime, should be experimented with. Here is a field which might be profitably investigated till we obtain control over this scourge.—Ed.

PLAIN, PRACTICABLE DIRECTIONS FOR DRAINING, SUBSOILING, AND PREPARING AN ACRE OF GROUND SUITABLE FOR A GARDEN OR A FRUIT-TREE ORCHARD.

BY WILLIAM REED, ELIZABETHTOWN, N. J.

It may be considered presumptuous in me to say anything about draining, when we have so many treatises by scientific men, who have given us a history of all the newest improvements and various methods in practice at the present day. To enter into a discussion on the various systems is not the object that I have in view, but simply to give directions for performing the work effectually.

We will suppose the ground to be drained, nearly level, or with a fall of two to three feet to the 100, more or less; the first thing to be done is to secure an outlet, or main trunk drain, to carry the water out of the parallel drains, which ought to be, if possible, not less than three feet, although two feet to thirty inches, if no greater depth can be got, will answer when the ground is ascending, as the depth will be gained after digging the parallel drains a short distance. It is sometimes necessary, to get an outlet to the trunk drains, to dig some distance to get a fall to carry the water off, but, without this, the whole labor would be lost. An open ditch will answer for this purpose, or a tile drain, where there is much water to carry off; the tile ought not to be less than four inches diameter; the ∩, or tube tile O; either will answer, but, for a soft, sandy bottom, the tube tile is preferable, on account of settling. After the trunk drain has been made, then measure off the parallel drains to lead into the trunk drain, twenty-five to thirty feet distant from each drain. These ought not to be less than thirty-three inches, but three feet will be better where there is only surface water to be carried off; three feet deep at this width will answer the purpose perfectly well, but, on hilly ground, where there are springs flowing out on the surface, it will be necessary, sometimes, to sink them deeper, to tap the vein of sand that the water flows from, and carry it off below the surface.

The usual way, and the quickest, is to stretch a line in the direction that the drain is to be dug, and mark it with the spade, as a guide to dig by, on both sides; twenty inches or two feet wide, on the top, will answer for drains of this depth, and let them draw in gradually, so that, when finished, they are wide enough to let a spade or narrow shovel run in the bottom; narrow spades are sometimes used for the last spit, made expressly for this purpose, with a small scraper to take up the bottom. A narrow No. 1 spade, with a long handle, I think is equally as good, and leaves a smoother bottom for the tile. Where grounds are limited, draining is always done with spades; the two first spits being good, soil is put on one side which will take out twenty inches to two feet; if the shoveling has been taken clean out after each spit, then the bottom, the poorest of the soil is laid on the opposite side, to be first filled in on the tiles, leaving the best soil for the top. The cost of digging will depend on the kind of soil; if the bottom spit is hard, so that the pick has to be used, it will make a material difference in the expense; fifty feet a day for a man, including laying tile and filling in the earth, will be as much as he will be able to do, if the bottom proves hard; but, where the digging is easy, and the ground soft, he will accomplish seventy-five to one hundred feet, when the depth does not exceed thirty-three inches to three feet; it requires about 1,400 feet to drain an acre thoroughly, and the same number two-inch drawn tile;

the ∩, or tube tile, may be used, should the bottom be soft; tube tile is the best. The ∩ tiles, where the bottom is hard, require nothing under them, but, in spongy, soft spots, to keep them from sinking, a piece of board is sometimes used; the usual price of two-inch tile is ten dollars per 1,000; the larger size, three to four inches, twelve to fifteen dollars; each tile lays a foot good measure; when the ground is flat, and nearly level, the person digging must be careful to carry the bottom the proper depth, which can easily be done by those that are accustomed to the work by the eye; it ought never to be dug so that the water will stand, but have a gentle fall, enough to carry it all off; the tiles, also, require to be laid as close as the joints will permit, to prevent the earth from falling through, which would impede the run of the water on the tile; care must also be used when connecting the parallel drains with the trunk or main drain, which can be done by breaking out a small piece of the tile with a hammer or pick, covering it up carefully with pieces of broken tiles, so that no obstruction may be made to the water running freely out of the parallel drains. Some people put a few shavings or straw over the tiles before filling in the earth; if they are to be had conveniently, they will do no harm, but it is not very essential. If the tiles have been carefully laid, this form of draining is the most simple and effectual, and never fails to dry the ground of both surface and spring water, as it is impossible to miss any spring, if the drains are run parallel all through the ground.

When stones are in the way, they may be used in the place of tiles, but not otherwise, as the cost of carting and filling will be more than the cost of tiles; when used, they are sometimes, if of small size, filled in ten to twelve inches in depth, but, when the run of water is great, they are generally made by laying stones on each side, and covering with a flat one on the top, then, filling over this six inches of small stones, which makes a capital drain; the cost, however, is double the expense of tile.

Where neither stone nor tiles are to be had, brush is sometimes used, and, if well-packed and cut up, so that it will pack very close together, say eight to ten inches in depth, will run water very well, and last for a number of years, if the outlet is kept clear. Where grounds are extensive and rolling, and the grade falling off in different directions, it will be necessary, sometimes, on account of its level, to make more than one trunk drain, but, in whatever way the ground may be, the same system may be used to any extent, where labor is an object; and, for farming purposes, the digging might be nearly saved by using the plough and subsoil. I am satisfied that drains three feet deep may be all done with horses, except the bottom spit, which would require the spade; the filling-in of the earth can be done in the same way, and one-half the expense saved.

Draining is not necessary in all soils, but only in such as are of heavy clay, with a hard subsoil, or in wet, spongy grounds. Where the subsoil is gravelly and porous, and leaves no water on the surface after heavy rains in summer, draining is not required. I find that, on heavy soils, plants suffer much more from heavy rains in summer than in the winter, if undrained, there being no other way for it to dry but by evaporation, and, before this takes place, the water in the soil becomes putrid, particularly in warm weather; but, when this kind of ground is underdrained, the drains run out the water from below, and the surface dries rapidly by the sun, so that, in two days after the heaviest rain, the ground will be in working order.

Undrained grounds, again, in the winter and spring, are very injurious to the roots of trees, grass, and all kinds of grain, causing them to lift out of the ground with frost, and leaving the roots exposed, and (almost sure) a great part of them to perish.

Having extended these notes on draining to a greater length than I intended, I will now close with a few brief remarks on the preparation of the soil.

The ground we will suppose to have been all under-drained, and all the grading and levelling that the ground requires to take out all the inequalities, to have been finished; this is better to be done before subsoiling than afterwards, which leaves all the ground of regular depth; if done afterwards, there would be some places not so deep as others. Then apply twenty cords of good barnyard manure, with two hundred bushels of air-slaked lime, spreading it regularly over the surface; this will make it ready for the plough and subsoil. To do this well, it requires a good, strong span of horses or cattle; but, when to be had conveniently, four would be better than two, particularly when the subsoil is hard. The best way to have this done well, is to make openings with the plough, by ploughing out the first furrows thirty feet apart; then commence with the subsoil plough first in the bottom of the open furrow, which will leave nothing undone, as would be the case if these furrows were not thoroughly opened; with a good plough and subsoil, now keep going round, and working into this until a fair opening is made, which will be in the course of three or four rounds; furrows ought not to be taken more than ten inches to a foot wide, to enable the subsoil plough to break up the bottom well. Half an acre a day for one team is quite enough, if the work is well and regularly done, which ought to be fifteen to sixteen inches deep; one span of horses will break up this depth. The first furrow to be made with the common plough, going round both sides; the subsoil plough being at hand, slip the horses on the subsoil, and follow round in the same furrow; this causes very little delay when once fairly commenced, but, when two teams are at hand, this of course would not be necessary; by continuing this fifteen feet on each side of the furrow, will finish a land, making it thirty feet wide; then commence again on the next, and so through the whole piece to be ploughed; the harrowing and levelling the ground afterwards completes the whole operation. It can then be laid out in whatever form or shape the proprietor may wish for a garden, fruit orchard, or a lawn; and, if the work has been thoroughly done, according to the directions here given, I have no hesitation in saying it will be in fit condition to grow any kind of crop; on grounds of limited dimensions, the spade may be used in place of the plough.

[This is all plain and practical. Mr. Reed's own nursery grounds are an evidence of success that we are always pleased with an opportunity of pointing out.—ED.]

THE PEAR SLUG-WORM.

BY MISS MARGARETTA MORRIS, GERMANTOWN, PA.

THE slug-fly is of a glossy black color, except the first two pairs of legs, which are dirty yellow or clay colored, with blackish thighs, and the hind legs, which are dull black, with clay colored knees. The wings are somewhat convex and rumpled or uneven on the upper side, like the wings of the sand-flies generally. They are transparent, reflecting the changeable colors of the rainbow, and have a smoky tinge, forming a cloud or broad band across the middle of the first pair; the veins are brownish. The body of the female measures rather more than one-fifth of an inch in length; that of the male is smaller. In the year 1828 these sand-flies were observed on the cherry and plum-trees, in Milton, Mass., on the tenth of May, but they usually appear towards the end of May or early in June. Soon afterwards some of them begin to lay their eggs, and all of them

finish this business and disappear within the space of three weeks. Their eggs are placed, singly, within little semicircular incisions through the skin of the leaf, and generally on the lower side of it. The flies have not the timidity of many other insects, and are not easily disturbed while laying their eggs. On the fourteenth day afterwards, the eggs begin to hatch, and the young slug-worms continue to come forth from the fifth of June to the twentieth of July, according as the flies have appeared early or late in the spring. At first the slugs are white; but a slimy matter soon oozes out of their skin and covers their backs with an olive-colored sticky coat.

They have twenty very short legs, or a pair under each segment of the body, except the fourth and the last. The largest of the slugs are about nine-twentieths of an inch in length when fully grown.

The head of a dark chestnut color, is small, and entirely concealed under the forepart of the body.

They are largest before, and taper behind, and in form somewhat resemble minute tadpoles.

They have the faculty of swelling out the forepart of the body, and resting with the tail up.

These slugs live mostly on the upper side of the leaves, and eat away the substance, leaving only the veins and skins untouched. The trees attacked by them are forced to throw out new leaves during the heat of the summer; this unseasonable foliage, which should not have appeared until the following spring, exhausts the vigor of the trees and cuts off the prospect of fruit.

The slug-worms come to their growth in twenty-six days, during which period they cast their skins five times. After the last skin is thrown off, they no longer retain their slimy appearance and olive color, but have a clear yellow skin, entirely free from viscidity. They change also in form and become proportionably longer, and their head and the marks between the rings are plainly to be seen. In a few hours after this change, they leave the trees, and having crept or fallen to the ground, they burrow to the depth of from one inch to three or four inches in the ground, according to the nature of the soil. By moving their bodies, the earth around them becomes pressed equally on both sides, and an oblong oval cavity is thus formed, and is afterwards lined with a sticky and glossy substance, to which the grains of earth closely adhere. Within these little earthen cells or cocoons the change to chrysalids takes place; and in sixteen days after the descent of the slug-worms, they finish their transformations, break open their cells and crawl to the surface of the ground, where they appear in the fly form. These flies usually come forth between the middle of July and the first of August, and lay their eggs for a second brood of slug-worms. The latter come to their growth, and go into the ground in September and October, and remain there till the following spring, when they change to flies.

It seems that all do not finish their transformations at this time; some are found to remain unchanged in the ground till the following year; so that if all the slugs of any one hatch should happen to be destroyed, enough from a former brood would remain in the earth to continue the species.

Ashes and quicklime, sifted on the trees by means of a sieve fastened to a pole, was recommended by the late Hon. John Lowell, of Roxbury, for the destruction of the pear and cherry slug-worm, and it is found to answer the purpose.

A NEW ORNAMENTAL MANUFACTURE.

THERE has long existed at Milan, in Italy, studios where are manufactured very artistic ornaments for lawns, terraces, piazzas, &c., which are much esteemed throughout Europe. We lately saw some of these articles at a country-seat near New York, and took some pains to discover the agent for their sale, whom we found to be G. Albinola, Esq., at the store of Sturgis, Shaw & Co., 52 Broadway, where some very fine specimens are now on sale, consisting of vases of elegant forms, very highly ornamented, see Fig. 1, and carvings pierced for fountains, of which Fig. 2 will give a good idea.

Fig. 1.

The material is secondary limestone and breccia, of a hard character and good color, capable at the same time of being readily worked, and yet of withstanding the elements so thoroughly that houses are frequently constructed of it in Italy. The artists have exhibited great taste in forming these ornaments, among which, besides statues and statuettes, there are tables, and small single and double chairs, and even long sofas

Fig. 2.

Fig. 3.

of beautiful carved work. An elaborate arm-chair, of which we also give a design, is represented by Fig. 3.

In consequence of Mr. Albinola not having a warehouse to display these objects, they have not made their way to the general knowledge of the public, and as they are bulky and heavy, it will be too expensive even to expect another importation of them, unless it is through special orders.

The getting of these engravings has been tedious and expensive, and but for our wish to present agreeable and novel objects for rural embellishment, we should not have willingly undertaken to make them thus known. The carving is deep and bold, and many of the articles will be much admired by the tasteful amateur.

CULTURE OF THE HELIOTROPE FOR WINTER FLOWERING.

BY DANIEL BARKER, UTICA, NEW YORK.

ALTHOUGH the Heliotropium corymbosum, and Peruvianum, with many beautiful varieties of more recent introduction, have been known, in collections, for years, and are by no means difficult to manage, yet, good flowering specimens are seldom to be met with during the winter months, when it is so desirable to have them in flower, emitting their delightful fragrance all around. The suitability of the Heliotropium for greenhouse decoration, during the flowerless and dreary months of winter, does not appear to be so generally known as it should be.

To grow them for this purpose, the cuttings should be rooted in March or April; afterwards potted into three-inch pots, and placed in a frame, with a gentle bottom heat, and, in about three weeks or a month later, shifted into larger pots, when, if the season is sufficiently advanced, they may be plunged in a sheltered, warm border, being careful to shift them, from time to time, as the pots become filled with roots, until they are finally in ten or twelve-inch pots; keep them plunged until the weather becomes too precarious to leave them exposed longer, by which time they will have become fine, strong, bushy plants, well furnished with flowering shoots, and should be taken up, the pots washed clean, and have a good top dressing of rotten manure and leaf mould; the plants tied nicely into shape and removed into the greenhouse or conservatory, where they will continue in flower the whole of the winter. When in their winter quarters, be careful they never want for water, otherwise they will lose their leaves, and, although retaining their flowers when denuded of their foliage, they become unsightly. Where circumstances admit, a good location for the stronger grown varieties is the back wall of the greenhouse or conservatory, where it will soon cover a large space, and flower freely throughout the winter months. For such a situation, the Intermedia, Corymbosum, Peruvianum, Souvenir de Liege, and Triomphe de Liege, are well adapted.

We need scarcely add, that to form a correct knowledge of the full value of the Heliotrope as a winter flowering plant, can only be by seeing well-grown specimens loaded with their sweet and beautiful flowers in rich profusion, fresh and lovely from the hand of nature.

Those who may feel desirous to have this beautiful plant to flower during the ensuing winter (it being now too late for cuttings to root and become sufficiently established for that purpose), can do so by purchasing of any florist or nurseryman, being careful to repot them and stop them back, placing them in some well-sheltered situation, and treating them as formerly mentioned; they will then amply repay any care and attention which may have been bestowed on them.

The following are well adapted for winter flowering in pots:—

Beauty of the Boudoir.—Best of all Heliotropes.

Marguerite Wilson.—A splendid variety, with large flowers like Triomphe de Liege, with a dwarf, compact habit.

Corymbosum.—An old, but beautiful kind.

Lucien Tardiff.—One of the best for winter flowering.

Reptans.—A most beautiful variety, with an incomparable perfume.

Reptans Major.—Said to be superior to Reptans; raised by Mr. Geo. C. Thorburn, of Newark, N. J.

Pendulum.—A new and beautiful variety, well adapted for vases, &c.

Aug. 1, 1856.

CRITIQUE ON THE JULY HORTICULTURIST.

The Horticulturist, its History, Progress, &c.—As Junius said to the Duke of Grafton, "If I should happen inadvertently to say anything in praise of your Lordship, it would be imputed a slander upon my usually expressed opinions," or something of the sort, as I only quote from memory what I read some thirty years ago, and as I am not much in the habit of praising anybody or anything, I have only to say, in the classic style of Davy Crockett, alas, that he left not his fellow! "Go ahead." The discourses of its own pages are the best commentators on the merits of the *Horticulturist.*

Buffum Pear.—A good fruit; and when our pomologists confine their chief attention to the best selections from our native pears, they will succeed much better than in cultivating the refined and overworked fancy things from abroad. Rely upon it, every country produces something of its own, which, *in its line*, will prove the most valuable for *permanent* cultivation. It has, thus far, proved so with American pears.

Grafting by approach.—One of the *fancy* ways of doing a very necessary piece of work. When a man wants something to keep him out of mischief, and hasn't a pile of shingles at hand for whittling, he may set himself to "grafting by approach."

The Upas-tree.—With what horror did I use to read that dreadful story of the Bohon Upas in the *American Preceptor* at school, when a boy! Any *man* of observation ought to have known that the story was a downright Munchausen, but with that sagacity common to most school-book compilers, into the book the story went, and so we, young noodles, believed it then, as half of the older ones believe it now.

William Coxe, the Pomologist.—A fresh racy sketch of a useful man; worth, to the American world, more than half its politicians put together. You can do no better service, Mr. Editor, than to thus chronicle the good deeds of such benefactors to their race. Coxe was one of the first fruit authors I ever read; a delightful book it was to me, and, for the times, one of rare merit. Imperishable honor to William Coxe, of Burlington, New Jersey!

Dwarf Pears.—Very well for the garden, but not *out* of it; provided you confine yourself to half a dozen varieties.

Pruning of Pear-trees.—Another most valuable article from your correspondent "B." Read it, everybody who grows a pear-tree, and wants to cultivate it *right.*

The Old Topiary Work.—One of the old time absurdities which I hope may never be revived in America. Any extent of waggery and burlesque may be applied to such nonsense with justice. I have seen now and then an abortive effort at the thing in this country, but with a thorough contempt of the puerile taste that dictated it.

Have Ferns Sexes?—Why not? It is pretty much a settled principle that all vegetables have sexes. If so, ferns must. I fancy it to be the *organic* law with vegetables, as with animals, that sexes are indispensable to the renewal of their species, although the *continuation* of life may be prolonged indefinitely in the one by layering, cuttings, and ingrafting, while the other has its *individual* vitality bounded by the inexorable laws of its creation.

An Octagon House.—Why inquire, Mr. M. P. of *Sing Sing, N. Y.*, about such an absurdity? I would as soon undertake to live in a tee-to-tum, or an anchored balloon as in a house that has every side and corner alike, and no front

and rear approaches. Have all the world been simpletons for the past six thousand years and upwards, that they never adopted octagon houses? Your remarks, Mr. Editor, are to the point, but "the play is not worth the candle."

Designs for Improving Country Residences.—Multum in parvo. These articles of Mr. Saunders are suggestive, therefore valuable. An acre and a quarter of ground, as in this plan, contains a great many family comforts and luxuries in its vegetables and fruits; as well as retirement, and positive enjoyment in its pleasure grounds with its trees, shrubs, and flowers. An effective plan for a given piece of ground and buildings can only be made after an accurate observation of its character in position, variety of surface, views, &c. Limited space, with various requirements, must be *embroidered* like the one before us; and, when effectively done, it becomes a beautiful and complete home. Yet the dwelling upon it must not be ambitious; nothing above the cottage. A pretentious house must have ample grounds, and wide plantations, otherwise it appears wonderfully belittled by its petty surroundings.

Citizens new to the Country, p. 337.—My dear old fogy brother, what else can you expect, if you live within striking distance of a large city, and your quiet old village has an air of decided repose and comfort about it? You might have known that the town Goths and Vandals would make a descent upon you, and the wonder is, why they have delayed it so long. There is no way but to submit to the present and coming state of things; and unless you can crib and cabin yourself within your own grounds by a high fence, hedge, or wall, just sell out to these destroyers of your peace for five times as much money as you ever before supposed your place to be worth, as you can do, and let the money you receive for it compensate the sacrifice of your quietude. I know of no more sensible way to be revenged on such intolerable snobbery as you describe. JEFFREYS.

CULTURE OF THE STANWICK NECTARINE.

BY T. L. HARRIS, GARDENER TO H. H. HUNNEWELL, ESQ., WEST NEEDHAM, MASS.

[On a late visit to the country residence of H. H. Hunnewell, Esq., thirteen miles from Boston, on the 19th of July, we were handed a large plate of the most exquisite Stanwick Nectarines raised by his gardener, Mr. Harris. To say this fruit in perfection is excelled by no other now cultivated in America, is only its just praise. The following is Mr. Harris's account of his treatment of the tree. It seems so simple that no one need fail in pursuing it; every person with a peach-house or even a grapery may succeed.—ED.]

WHEN you visited the residence of H. H. Hunnewell, Esq., West Needham, Mass., you were gratified with a taste of the Stanwick Nectarine, a fruit unsurpassed by any other Nectarine, and one I have been exceedingly fortunate in ripening to perfection.

In compliance with your wish, I send you my mode of treatment, which I hope will be an inducement for others to cultivate more extensively this most luscious fruit.

It appears from reports received from England that the Stanwick Nectarine, from some cause or other, has not given that general satisfaction we were led to suppose would have been the case from the encomiums bestowed upon its first introduction, and even in America it has turned out, comparatively, a failure by many who attempted its culture.

The two trees in Mr. Hunnewell's possession were obtained four years ago, from New York, and were planted in tubs containing one and a half bushel of

earth each; the soil was composed of about equal parts sandy loam and old hot-bed manure; in this compost they grew rapidly, and in the succeeding spring each tree set about thirty nice fruit. On the first day of May, 1854, my engagement with Mr. Hunnewell commenced, and within one week from the above date every fruit fell off (the fruit were evidently undergoing the process of stoning, a critical period with all stone fruits); this misfortune I attributed entirely to the low temperature they were sometimes subjected to, the young man who had part charge of the house informing me the temperature inside was often as low as 40° at sunrise.

This disappointment made me determined if possible to ripen them another year; in order to do this I felt it was important to secure well ripened, short jointed wood; this I achieved to my entire satisfaction. On the 20th November, 1854, I put them inside the grapery, and withheld water from them until the 15th January, 1855; when I commenced starting them at a temperature of 40° to 45° at night, and 50° to 55° by day; syringing them three or four times a day until the blossoms began to expand on the 5th of February; by this time the trees were really magnificent, being literally covered with large deep pink blossoms. I assisted their setting by the use of a camel's-hair pencil, and in about a fortnight, as soon as the blossoms began to decay, I had the satisfaction of seeing every shoot covered with embryo fruit. I then increased the temperature to 45° to 50° by night, and 60° to 70° and even 80° in bright days, syringing them frequently; cautiously admitting air in cold weather, and giving the trees just sufficient water to keep them in a growing state. Just previous to their stoning, or when the fruit are about the size of chestnuts, I thinned out the fruit, and left one, and sometimes as many as three, on each shoot. When about the size of walnuts, or as soon as the stoning process is over, I commenced watering in earnest, giving each tree not less than eight gallons of water daily, with a moist temperature of 70° to 90° by day, and 55° to 60° by night. Three or four times a week I watered them with a weak solution of guano, the quantity used about one ounce of guano to one gallon of water, always applying the liquids at about 65°—this I conceive of the first importance.

Under this treatment the fruit swelled with astonishing rapidity. As the fruit approached maturity, I ceased syringing altogether, and applied pure water only at the rate of five gallons daily, keeping the air as dry as possible, but admitting as much fresh air as circumstances would admit of. By the 4th July each tree bore thirty and forty large well ripened and highly colored fruit.

My success having surpassed my expectations, and being perfectly satisfied that the treatment adopted was such as the tree required, I have pursued the same course since, and this season I have been again successful; one tree producing nearly four dozen, and the other six dozen of the finest fruit imaginable, some specimens measuring 7½ inches in circumference, and all beautifully colored, where not shaded by the foliage. Those persons who have tasted the fruit have expressed themselves in the strongest manner in its praise, and I believe it has been the general opinion that the flavor was superior to any other variety cultivated in this section of the country; indeed, coming up fully to the glowing descriptions given when it was first introduced into England.

There is an impression that this fruit is particularly liable to crack, but from my observation in its culture, I should not say it had any very strong tendency that way, though it is very likely to be the case if kept too damp or allowed to be wet in the last stage of its growth. I feel confident no one will be disappointed in this respect, if they follow strictly the treatment I have just indicated.

West Needham, July 18, 1856.

PLANTING.—A THEORY FOR AMERICA.

BY THOMAS MEEHAN, GERMANTOWN, PA.

When a gardener first arrives in this country he is told that in a great measure he has his business to learn over again. This is a matter of surprise to him. Are not, he inquires, the principles of gardening the same all the world over? Knowing the theory of Horticulture, can I not vary my practice to suit circumstances? This would be all very well if this "theory" were perfect, which unfortunately it is not yet found to be.

In nothing more have we been mystified by theory, or rather left to our own dark ways, than in the matter of the best time to plant trees. After all that has been said and written, where are there two who will agree to any well defined principle? "I have found spring to be the best time," says one; "but," says his friend, "I have found autumn to be a better." Now if our theory were truly perfect, would there be any difference of opinion on this point? I think not.

All the aid we have received from physiological writers is, as stated by Lindley, by whom we are accustomed to swear, that, as the roots of plants grow in winter, except when actually encased in frozen soil, it is better to plant in fall and winter than in spring, because the extra supply of roots before the period of spring growth, renders the plant better able to meet the demands for moisture the foliage makes on it.

This theory is right in this, that it assumes the importance of preparing the fullest supply of moisture and food for an expected heavy demand; but it is faulty in supposing that that demand does not occur till spring. In England it would be right enough, but in America it is all wrong.

If we cut a branch from a tree, and expose it to a clear sun, it is dried up in a few hours; but if it be a foggy, misty time, it will not dry up as much in a day. So much depends on a dry or moist atmosphere. Evaporation rises from a living tree, as well as from a cut branch, and in proportion to the saturation of the atmosphere. In England, during the winter months, its atmosphere is as nearly saturated with moisture as possible, but in America, is nearly as dry as in summer. Indeed, it is a question whether it is not dryer in our severest frosty days, than it ever is under our blazing midsummer sun. Hence a living tree in England would be storing moisture every day during winter, while the same tree in America may have it drying out faster than it comes in by the root.

In choosing the best time to plant trees, therefore, we have to make it, as I have said in my *Handbook of Trees*, "a question of evaporation," rather than one of growth by the roots merely. Then we can understand the varying success of different individuals with different seasons, which before seemed unaccountable. One man plants a quantity of hemlocks or junipers in November; the roots commence to grow at once, but also at once, sets in a dry cold "spell," and the moisture evaporating faster than it comes in, the plants dry up, are in fact "scorched," as truly, literally, scorched as if by the influence of a July sun. He goes at it again in spring, a moist time ensues, not rainy, perhaps, or even foggy; but a genial, mild, "even tempered" time, and they succeed. Then the time, not the circumstances, suggests itself, and with him there is no time to plant like the spring. Not so with his neighbor; he also planted in November; "didn't take any particular care either." For a few days there was so much moisture in the atmosphere that the roots had time to "get a fair hold"

before moisture was much wanted. The winter was not severe—twenty or thirty degrees of frost were not day after day bringing the moisture to the surface of the branches by expansion, and on the south side the sun drying it off as fast as it froze out—they had nothing of all this to endure, and they succeeded. You don't catch my friend planting hemlocks and junipers at any other time than the fall or winter after this. And so it goes, the world outside all the while exclaiming: "How the doctors disagree."

The subject is capable of much further elucidation. What I have said will, however, be sufficient to show that to know when best to plant trees, will require us to study more than we have done, how to promote or check evaporation.

FRUITS OF KENTUCKY.

BY DILATRIO, NEAR ELKTON, KENTUCKY.

It has been with feelings of astonishment, mortification, and disappointment, that I have searched the Horticultural periodicals of our country for at least an occasional hint of the progress of that science in Kentucky. Almost every other State in the Union has its watchman on the walls, ready to proclaim the welcome tidings of Horticultural advancement in his particular locality, except Kentucky. I have waited with becoming patience for some one competent to the work, to come forward and perform this pleasant task for Western Kentucky, but have waited in vain. Why is this? In point of energy, industry, and intelligence of our citizens; mildness of climate and general adaptation of soil and climate to the production of all the fine fruits and flowers of a temperate climate, Kentucky is behind no other State, perhaps, in the Union.

It is but little more than half a century since the savage Indian held entire possession of this vast valley, and as is customary in the settlement of new countries, the first care of the settlers was to secure the necessaries of life, and after this the comforts, conveniences, and luxuries. These having been secured to some extent, our progress in "rural taste" is astonishing. Ornamental trees, shrubs, flowering plants, in short every plant adapted to this latitude having the reputation of beautiful, or even pretty, is eagerly sought, and quite a number of our citizens are also cultivating the finest species of greenhouse plants.

Our improvement in fruits and fruit culture has been no less rapid. The first apple-trees planted were seedlings, brought by the emigrants from Virginia, Carolina, &c., and nine-tenths of them could only be tolerated where there was no better fruit. Many of these trees are yet in a healthy productive condition, and seem to bid fair to remain so for half a century to come. But now how changed the scene. Fine young orchards of apple, peaches, pear, and plum trees, of the best varieties to be had in the country, are almost everywhere to be seen in this section of country.

Tens of thousands of apple-trees of the finest varieties that can be obtained, in this or any of the adjacent States, are put out every year, and the demand still on the increase. Most of the new varieties of high reputation in the older States have found their way here. Our climate and soil are wonderfully adapted to the growth of the apple, and it is believed that no State in the Union produces them in higher perfection than Kentucky.

With few exceptions, the varieties of the Northern States succeed well here, the principal difference being in the time of ripening. Most of the winter apples of Massachusetts, New York, &c., ripen here in the autumn. The Rhode Island

Greening, however, is worthless here. Not one specimen in five hundred, perhaps, remains sound until it ripens. It is also a very shy bearer, and too acid even for hogs.

The Baldwin succeeds pretty well here, and with care will keep through winter. The Mela Carla fully maintains its high Italian character. The Jonathan is also at home with us.

The Large Striped Winter Pearmain is a large fine winter apple, and is perhaps the best market apple we have, on account of its size and beauty. The Prior's Red and Jenett, however, are the great favorites here for winter use. The Golden Pearmain, Columbia Russet, Renette Franche, Peck's Pleasant, Green Cheese, Wine Sap, Crow's Egg, Hall's Seedling, and a host of others, are cultivated here. We also cultivate a few varieties of apples here of first-rate quality, that I think are not known elsewhere. The following are some of the principal ones:—

Ben Davis, a large fine winter apple; Holland's Red Winter, is also a fine winter apple. The Homony Apple is perhaps the best very early apple that we have, ripening generally a little before the Early Harvest. Matlock's Summer, which originated in an adjoining county, is an apple of large size and very good quality, ripening in August. But as I have already transcended my intended limit, I will for the present close.

NEW PLANTS.

CUPRESSUS M'NABIANA. Nat. Ord. *Coniferæ*.—This beautiful Conifer was raised by Messrs. Veitch, from seeds gathered by Mr. W. Lobb, who found it on the Sierra Nevada of North California, where it forms a bush from eight to ten feet high. It presents a most striking appearance, with green and glaucous scales associated with the deep rich brown of *Tamarix gallica* on their branches, and shows that in youth and vigor the species must be exceedingly handsome.

DAHLIA, CRYSTAL PALACE SCARLET (*Dwarf Bedding*).—The qualities of this new bedding Dahlia are such that henceforth no garden with but half a dozen flower-beds will be complete without it. It fills up that void so long felt by many, namely, having a bed composed of large bold flowers, brilliant in color, profuse bloomers, and of dwarf habit. This Dahlia possesses all the above requisites; it will, therefore, be easily imagined how the smaller and more diminutive flowers are lost beside it; added to which, it is one of the easiest plants to preserve throughout the winter, and can be propagated in spring by dividing the roots, in the same way as an ordinary herbaceous plant. Persons in the habit of visiting the Crystal Palace last season must have been struck with the noble effect the Dahlia there made when pegged down; but this variety, from its dwarfness of growth, will not require such care; and those who have had the pleasure of viewing the noted gardens of Tedworth House last summer, will be able to appreciate the following particulars given of it by the able superintendent there: "In color, this beautiful dwarf Dahlia is equal to the most glowing scarlet Geranium; the flowers are of a medium size, very double, and full to the centre, of very compact habit, its growth averaging one foot and a half, and having fine dark leaves, which contrast admirably with the brilliant color of the flower; it commences blooming early in July, throwing up great quantities of flowers together, and remains one perfect sheet of bloom, until cut off by the autumn frosts. As a bedding plant, it will stand pre-eminent, and will be found unequalled for the decoration of the flower-garden during the autumnal months; another and not less

excellent quality of this plant is, that neither rain nor sunshine has any effect on its brilliancy."

JUNIPERUS PYRIFORMIS. Nat. Ord. *Coniferæ*.—Another of Mr. Lobb's introductions, when on his Californian tour. He discovered it growing on Mount Bernadino. It is a fine, distinct species, the fruit of which resembles small pears when young. The berries are deep purple, with a glaucous bloom on them. It grows as a low tree, from ten to twelve feet high, and is perfectly hardy in England.

PHOLIDOTA SUAVEOLENS. Nat. Ord. *Orchideæ*.—Much resembling a Lily of the Valley, but is an orchid, possessing like-formed leaves, flowers, color, and charming scent. It has been flowered by the Bishop of Winchester, at Farnham Castle. Its origin is not known. (*Gard. Chron.*)

RIBES SUBVESTITUM. Nat. Ord. *Grossulaceæ*.—A very pretty flowering hardy shrub, sent from California by Mr. W. Lobb, and belonging to the same section as our *R. speciosum*. The flowers, however, are considerably larger than those of that species, and of a deep crimson color. This will be a beautiful addition to our shrub borders, and deserves extensive cultivation.

R. FALCONERI.—Another of the beautiful Himalayan Rhododendrons which have bloomed this year for the first time. The present species has been flowered by Messrs. Standish and Noble, of Bagshot, in an open frame, merely protected at night by a mat; also with Mr. Fairie, near Liverpool. It is a very striking species, not only from the color and size of its heads of flowers, but also from the magnificence of its foliage. It grows on the summit of the Tonglo Mountain, in Sikkim—Himalaya, at an elevation of 10,000 feet. The flowers are produced in large heads, pale sulphur-yellow, broadly bell-shaped, upwards of two inches across the mouth; the leaves are from eight to ten inches long, about four inches across, dark green, and beneath ochreous; leafstalks pale green, somewhat woolly. (*Bot. Mag.*, 4924.)

FOREIGN NOTICES.

On Composts suitable for growing Florists' Flowers.—Having often experienced the inconvenience of being obliged to refer from one book to another for a description of the composts suitable for different flowers, I have collected some of the most approved together, thinking they might be useful to many of your readers. I send them for your insertion. *Carnations:* 1. Two-thirds fresh loam; one-third rotten frame-dung, with a little sand. 2. One-half loam; one-half rotten frame-dung, with a little sand. 3. Five-sixths of No. 1 or No. 2; one-sixth leaf-mould, good for Picotees. 4. One-third loam; one-third peat; one-third two-year-old cow dung. *Ranunculuses and Anemones:* Two-thirds loam; one-third rotten cow-dung. *Dahlias and Narcissus:* Loam well manured. *Hyacinths:* 1. One-third sea or river sand; one-third loam; one-fourth rotten cow-dung; one-twelfth leaf-mould. 2. Two-sixths gray sand; two-sixths well-rotted cow-dung; one-sixth tanners' bark, quite rotted; one-sixth tree leaves, well rotted. *Pinks:* Two-thirds loam; one-third two-year-old cow-dung. *Tulips:* Good sound loam. *Auriculas:* 1. One barrowful of loam; one barrowful of leaf-mould; one barrowful of old frame-dung; one barrowful of two-year-old cow-dung; one peck of river sand. 2. Two barrowfuls of sandy loam; one barrowful of leaf-mould; one barrowful of two-year-old cow-dung. 3. One-half rotten cow-dung; one-sixth loam; one-eighth leaf-mould; one-twelfth sand; one-twenty-fourth decayed willow wood; one-twenty-fourth peat; one-twenty-fourth ashes of burnt vegetables. *Polyanthuses:* 1. One barrowful of sandy loam; one peck of leaf-mould; one peck of old cow-dung. 2. One barrowful of well-rotted cow-dung, or leaf-mould; one-half barrowful of white sand; two barrowfuls of good loam. *Heartsease:* Three barrowfuls of fresh loam; one barrowful of one-year-old horse-dung; one peck of sand.—D. Pearce, *Wakefield, England.*

Chorozemas.—This tribe is generally considered by amateurs difficult to cultivate; but they can be grown well by pursuing the following method: The soil should be a sandy peat, well broken with the spade, but not sifted. The best time for potting is March or April. Care must be taken not to over-pot the plants, or injure the roots while potting; the soil must be made very firm and compact about the roots, and the pots well drained; then they should be placed in the greenhouse in an airy situation, and not crowded among other plants. It is also well to keep them in the greenhouse during summer; but in hot weather they should be shaded for two or three hours each day during sunshine. They require a reasonable supply of water; that is, they must not be sodden, nor left too dry. They may be propagated in the following manner: the cuttings should be taken off and carefully prepared while the wood is young; take off the bottom leaves with a sharp knife, and make a clean cut horizontally just through the joint; the cutting-pot should be drained, and then filled to within an inch of the top with the soil above mentioned; on the top of this put a layer of white sand, into which put the cuttings, making a hole for their reception with a small stick. When the pot is full, give them a little water with a fine rose; after which, place a clean glass over them: in this state they may be removed to the propagating house, where the temperature should be 70 degrees. They should be shaded from the sun, which can be done by placing a sheet of coarse paper over the glasses. As soon as the cuttings are rooted, which may be known by their appearance of growth, they must be potted off; but care must be taken not to injure the roots, and they must be shaded again for a week or ten days, until they make fresh ones; they must then be gradually hardened, and placed with the old plants in the greenhouse.—*Alpha* (*Gard. Chron.*).

Oxalis Floribunda.—Were I desired to select the most picturesque plant, yielding a long-continued and profuse crop of flowers without artificial attention to its after-growth, I should without hesitation fix upon this. It is a dwarf, tuberous, herbaceous plant, rising from two to four inches in height, each plant forming a terminal crown of leaves (similar to a small-growing Clover), from the centre of which arises a profusion of bright rose-colored flowers, continuing in succession from June until September. The principal precaution required for its successful management consists in adapting the soil to the tuberous structure of its roots, which differ from most others in their thick, fleshy, unbranched form, capable of absorbing an excessive amount of fluid, beyond what is required for the support of the simple crown of leaves upon their summit. As a general rule, the amount of soil, and the nutritive properties which it contains (when applied to plants), should always bear a strict relation to the extent of growth which they are capable of maturing during the current year. Every degree beyond this is an evil, which lessens the vital energy of their organs. To induce fertility in the plant, an artificial soil should be prepared in equal portions of old light garden loam, heath mould, and well-washed river or silver sand, and well incorporated with finely-broken brick refuse, equal to one-third of the whole amount. Thus treated, it forms a very beautiful object, either for edging or in the parterre, and when seen expanding its bright blossoms for successive weeks, it appears as one of the few objects of which it may be remarked that it has "few equals, and no superiors." In common with some others, this interesting plant is much degenerated by the inferior varieties from seed, which have almost supplanted the original species, the former being much less compact in their growth, and less brilliant in their flowers. The latter is known by its leaves being not more than from two to three inches in length, and by its flowers being uniformly circular, and firm in their texture, varying from bright to darker shades of rose color, and when found in favorable situations, the profusion of bloom almost covers the foliage.—*W. Wood.*

Propagation of the Anemone Japonica.—If a root of this plant be taken from the ground, after flowering, it will be found to resemble brown cord, divided into a great number of ramifications. Upon its surface will be perceived a great multitude of little white conical projections, sometimes growing singly, sometimes springing up in clusters, and occasionally producing scales on their sides. They are young buds, every one of which, if cut from the parent, will grow, and form a strong young plant in a few weeks. These buds are not confined to the main trunk of the root, but extend even towards its extremities, so that every fragment of the plant is reproductive. Such being the case, he who possesses an *Anemone Japonica*, has nothing to do but turn it out of its pot, when at rest, clean its roots, chop them into pieces about half an inch long, and then place them in some light fibrous soil, near the surface, in a gentle hotbed, and in a few weeks he will have as many healthy young plants as he may have chopped the root into pieces. Such is the wonderful power of reproduction in this plant, to which, indeed, we have few parallels.—*G. C.*

On Supporting Plants by Stakes.—Primary importance must be attached to the time at which support of any kind is to be afforded. The principal evils to be corrected in the methods at present pursued are staking plants at too late a period, and doing it with unsuitable materials, or in a slovenly way. If a specimen be not early staked, however neatly this operation may be afterwards performed, it will ever betray the neglect from which it has suffered, and can very rarely be brought into the required position. Beyond this, there is the danger of being broken or injured from wind and other causes, to which it is exposed prior to staking, and the fact that it is not necessary for stakes, when timeously applied, to be so strong; when, by consequence, they are not rendered so prominent or perceptible. Let a plant be staked while it is small or young, and its appearance will remain

as natural as if it had not been staked at all; but wait till it has begun to straggle, and no subsequent care will suffice to relieve it of the constrained unnatural aspect it must then be made to wear. Whatever material be employed for supporting plants, the chief object should be to conceal the stakes; and hence they ought to be as straight and free from projecting parts as possible, and as short and slender as comports with the purpose for which they are designed. Crooked stakes, those which have irregular and broken branches, such as are unnecessarily stout or tall, and stakes made of a soft pliable wood, or having too rugged an exterior, are exceedingly unfit for ornamental uses in the case of erect-growing species. The most proper are those which are smooth, straight, free from irregularities, just strong enough to effect their object, and so long as to reach only within a few inches of the top of the specimen, or as high as support may be needed. There are likewise many objections to the ordinary modes of applying stakes, or fastening plants to them. It is wrong to place the stake between the plant and the path from which it is looked at; for the object that ought to be hidden is thus made most conspicuous. It is improper to thrust the stake into the earth near the stem of the plant, particularly if it be a tuberous-rooted or bulbous species; since much damage may be done to the specimen, and probably some of its main roots and sources of sustenance be cut off thereby. For the same reason, it is equally erroneous to use a stick that is not prepared with a long smooth tapering point, or has any considerable asperities on that portion that is to enter the ground.—*M. S.*

Shrubby Calceolarias.—A very great improvement has lately been effected in this most useful decorative plant by Mr. Cole and others, who have devoted some attention to hybridizing for the purpose of obtaining improved varieties. We have this season bloomed a full collection in pots, for the purpose of testing their respective merits, and ascertaining which of them are most useful for bedding uses. Many of them have proved most valuable for this purpose; others are only suitable for pot culture, and are not shrubby enough, in habit, to stand the wear and tear of out-door work, and give a succession of bloom for the season. Our aim now is to give some account of all the varieties we have grown, and particularly to show which are really useful as bedding plants. And, with regard to the culture of Calceolarias in pots, our opinion is, that the shrubby varieties are far superior to the herbaceous kinds for pot culture. In habit, and in duration of blooming, especially, they are greatly superior, as they yield a succession of flowers for the season, while the herbaceous varieties do not remain in bloom half so long. They are also not so subject to greenfly. The shrubby varieties are very easily grown from cuttings, and require much less attention in wintering, as well as in their culture. Our method of growing them is this: The plants are just cut down from which cuttings will be taken in September. During the winter, they will be kept in dry, cold frames or pits, provided with small hot-water pipes in front, to keep out frost and damp, and the plants will be kept as near the glass as possible, to prevent drawing. They should be kept *well aired* and hardy, and quite free from greenfly, by repeatedly fumigating them. Especial care should be taken to keep them growing, and not allow them to receive a check, either from want of water, too much water, or any other cause. The soil we use consists of maiden loam, leaf-mould, and sand, mixed in a rough state, and not sifted. The plants should be stopped two or three times at various periods, and shifted as required, and 8-inch pots are quite large enough for full-sized specimens. *Plenty of air, kept growing, and cleanliness*, are most important points to be kept in view.

Deutzia Gracilis.—Few plants, among the recent introductions to our gardens, possess more interest, or have proved more valuable than the *Deutzia gracilis*, not only as an ornament for the shrubbery border, but also for pot cultivation. As a plant for early forcing,

for the decoration of the conservatory, and also for cuttings for bouquets, it is one of the most useful. Like its congeners, it is readily propagated by cuttings of the young wood, in a half-ripened state. If the wood is strong and healthy, cut the cuttings at a joint, as they will strike just as freely; if a leaf-bud and about an inch below is taken with it, each joint or bud will make a plant. To insure the cuttings rooting quickly, a gentle bottom heat will be necessary, and they must also be covered with a glass, to prevent the undue evaporation of the moisture. Any light rich soil will be suitable, such as a mixture of turfy loam, leaf-mould, and gritty sand; and, when planted out, any enriched garden soil will suit it. As a pot plant, it will require much the same treatment as *Wiegela rosea*—that is, the wood must be thoroughly matured in the autumn, to insure its blooming profusely when forced.

THE GARDEN RASPBERRY.—EDITOR HORTICULTURIST: In all the American books, I can find no mention of a *first quality, hardy* raspberry. In the several varieties recommended for cultivation, they are spoken of as requiring winter protection by bending down and covering with earth, which is a great labor, besides breaking many of the canes. Now I have had two varieties of red raspberry in cultivation for eight or ten years past, which are *perfectly hardy*, and have withstood every winter without shelter or protection. I never saw better bearers—the fruit is large, delicious in flavor, and the two together are a month (in open grounds) to six weeks in bearing, according to exposure. If located on the north side of a fence, they are longer in bearing, yet the south exposure will be earlier.

I pretend to no originality in, or invention of, these fruits. I obtained them from a garden in my neighborhood, which had been planted at great cost, by a gentleman of taste in such matters; the fruits, so far as I could learn, were "far fetched and dear bought." The owner dying, the ground was devoted to other uses by his successor. The gardener who sold them to me called one the Red Prolific, the other the Red Antwerp; but I can find neither of them described in the pomological books, or nursery catalogues, and I am certain that neither of them is the *true* Red Antwerp, which is not hardy. Mine grow much stronger, higher, and larger than the Red Antwerps do in this vicinity. Hearing so much said about winter covering for the raspberry, I had them carefully bent down and covered one winter, and nearly ruined them by the process. Since then they have had no protection whatever. They withstand the cold of this latitude, 42° 45′ north, as well as the wild raspberry of the woods, *or anything else—never missing a full crop*, and my small plantation giving me several bushels every season. They have never been marketed till this summer, and having leased my farm-garden grounds to a Scotch gardener, he sends them to town, where they are pronounced by the fruit dealers the best they have had, although the *true* Red Antwerps, requiring winter protection, are sent in for sale.

Having seen frequent inquiries in the papers for *hardy* raspberries, and believing that the varieties I have so long cultivated comprise the most desirable qualities for popular culture, I have advised my gardener to offer a part of his young plants for sale, which will be seen in the advertisement accompanying this. I grow them together promiscuously in the rows, which I think is an advantage to their abundant bearing, and they are easily distinguished by the color and character of their wood and fruit. They should be fairly cultivated in good ground, three to five canes in the hill, and cut down in the fall or spring to three or four feet in height, according to the strength of the canes. Tied at the top with a piece of twine, they need no additional support. Owing to their strong growth, I set the rows six feet apart, so as to use the place between them, and four feet apart in the row. When first planting, I put but one cane in a hill, as that throws up plenty of suckers for the coming year. The "true" Red or Hudson River Antwerp, compared with mine, has proved a failure in *this* vicinity. Yours, truly, LEWIS F. ALLEN.

Black Rock, N. Y., August, 1856.

EDITORS TABLE.

THE MANGOSTEEN.—An early number of the *Horticulturist* will contain a superb plate of the Mangosteen, which has lately been fruited in England. By general consent it is the best of fruits, but all attempts to cultivate it beyond its natural habitat, the Malay peninsula, and islands to the eastward of the Bay of Bengal, have heretofore been unsuccessful. We hope by figuring this superb fruit to induce some of our cultivators to attempt it in this country.

PINUS SABINIANA, OR PRICKLY-LEAVED PINE.*—The frontispiece represents the cone of the Pinus Sabiniana, about one-half its natural size, a splendid and useful species, found by the late Mr. Douglass on the western flank of the Cordilleras, at a great elevation above the level of the sea, being only 1600 feet below the range of perpetual snow, in the parallel of 40°, and likewise on the less elevated mountains near the sea coast, in the parallel of 37°.

The Indians were found to make use of the kernels as food; they are nearly as pleasant as almonds, except that they leave behind a slightly resinous taste.

The stems of these pines are of a very regular form, and grow straight and tapering to the height of 40 to 140 feet. A copious transparent resin exudes from the tree when cut. It was named after Mr. Joseph Sabine, Secretary of the London Horticultural Society; about London it appears to be as hardy as the *Pinus pinaster*. We observe it is advertised in this number by Ellwanger & Barry, and it is probable plants may be for sale by others. (See *Nuttall's Supplement to Michaux*, vol. iii. page 110.)

THE DIOSCOREA.—A correspondent of the *Sacramento Journal* having heard that one of the objections raised against the new potato was, that the Chinese themselves knew little about it, he made inquiry among the Chinese shops, and was successful at the first place he called. The storekeeper could not understand him, nor could the purchaser *him*, except when the inquirer picked up the roots to examine, when he said: "Good—all same as potato; mak'ee boil; two bits pound." This sets at rest one of the great arguments of certain doubters. We have said from the first, wait in patience till the roots grow before condemning them *in toto*. Time sufficient to prove them has not yet elapsed.

HOME.—The favorite sitting-rooms of many families in Paris and Berlin, as the evening hour comes on, are the balconies and terraces near the roofs of the houses, under the shade of trellises covered with flowers and foliage. They are often five or six feet wide, and are often furnished and decked out with great taste, even to the gilding of the railing, and the hanging of fancy curtains. For, let it not be supposed that those who live at the top of a house having such a terrace, are merely poor needle-women, or obscure artists. By no means; they are, more probably, people who can afford to have their chairs and sofas covered with velvet, and lounge away their evenings in looking down from their giddy

* See Frontispiece.

height on the equipages and *promèneurs* that crowd the Boulevards and streets of these magnificent capitals.

Some have young trees of lime, maple, and elm, six or seven feet high, with wide-spreading branches over head, which afford as much shade as is wanted; and there is, besides, what is called a *Berceau*, at one end of the balcony, neatly trellised over, and covered with vines, and in which there is a divan, or one or two seats. This is a perfect screen when the sitter is in the open air, but as private as within doors; sometimes a window is left, and a curtain, to drop as required, is left among the branches; an elegant aviary at one end, in which a dozen happy birds, of various colors, keep up a continual concert, are often an accompaniment, or a large cage, with a richly plumed parrot, may be seen in the centre, with the lady and children intent upon their books or needles. Many a charming Havana is consumed here after dinner, in the warm evenings, and many a litre of ruby wine.

In order to prevent anything like litter in the interior of the house, from frequent carrying out and in of plants, requiring fresh soil, or other attentions, a quantity of soil, with pots, and sticks, and trowels, and scissors, are kept in a cupboard-like box, under a seat. Such is one mode by which the European cheats time of its ennui, and lives in a civilizing atmosphere.

Home, and Home Education, is the title of an Address at the opening of the schoolhouse at Evergreen Hamlet, near Pittsburg, by William N. Shinn, May, 1856. It consists of a vast deal of common sense, aided by good feelings, and, if we had more space at our command, we should be glad to insert one-half of it; as it is, the following passage possesses so much merit, that we copy it alone:—

"There should subsist between the teacher and the learners a sort of community of purpose—a mutuality of object, as though all were learners in different stages of progress; and the respect felt for the master, as the head of the school, should be that kind which naturally follows an exhibition of superior wisdom, and not such only as may be exacted by the fear of punishment. The pupils should be co-workers with their tutor, and not merely passengers, having nothing to do but show their tickets at meal time, and answer "yes" when questioned about the payment of the "fare." Ten wrong answers, in aiming to give the *reason* of a fact, are of more utility, in education, than twenty correct reasons committed to memory and repeated *verbatim;* for, every answer implies an exercise of intelligence which adds strength, and, should success crown the last effort, there is a permanent lodgment made in the *understanding;* whereas, in the other case, it may only be in the *memory*, and may or may not remain there as a permanent investment in the stock of knowledge. We say, tritely, that 'knowledge is power!' and so it is, just as powder and ball are destruction. But it is true of the one as of the other, that without appropriate application no sequence follows. Without a cultivated intellect to guide knowledge to its end, it is not a whit less inert than the cannon ball when no impetus is given to it."

The pamphlet has a good picture of a very neat and substantial schoolhouse, such as we should be glad to see more of in our land.

A Pear Orchard.—It will be recollected that Messrs. Parsons, of Flushing, Long Island, parted with a large portion of their standard pears, which were set out as an orchard for market fruit, on account of the land they occupied being required for building lots. Many of these and some smaller ones found their way to our own neighborhood. Mr. Abraham Barker has 300 of these fine trees in excellent condition, and giving promise in a few years of most abundant returns. Among them we noticed 125 Lawrence, a pear that is said to be easily barrelled up, and keeping as well in that form as apples. His assortment comprises, besides the above, Bartlett, Duchess D'Angouleme, Louise Bonne de Jersey, Platt's Bergamot, Henry Fourth, Howard, Seckel, Aremberg, Andrews, &c. &c. The blight has

carried off about 8 per cent. of the above, and the slugs have attacked many of the trees very voraciously, but the latter depredator Mr. Barker has conquered by constant killing. The Seckel pear has been least subject to the blight, the Louise Bonne the most so, and Platt's Bergamot the next. Mr. Barker is just the enthusiastic planter we like to see; he has not expended all his money on houses, though these are all-sufficient for comfort, but has given his attention to garden and orchard, and ornamental planting, in a manner that promises to make his place in a short time one of the most attractive within the distance of a daily drive from Philadelphia. He is realizing the enjoyments of true country life, at the same time that a large city business receives its due attention; in short, we can say Mr. B. has *begun right*, precisely as we have so often recommended.

Gossip.—Agriculturists have their jokes as well as literary men. Judge Peters, of punning memory, one of the founders of the Pennsylvania Agricultural Society, commenced a reform in butter making, as an example that should render Philadelphia what it is, the best butter market in the world. At his first experiment of making sales in the market house, his butter was seized as being of short weight, and his weights were consequently sent to the examiner, coming home stamped, *C. P.*, for *Commonwealth of Pennsylvania*. "Ah!" said the inveterate and veteran wit to his wife, "they've found us out and marked us *C. P., Cheating Peters!*"——A lady of our acquaintance has lately been much interested by a family of flying squirrels which were born inside a latticed shutter of her boudoir window. At Dr. Ward's we saw a wren's nest in a similar situation in the library window of the good doctor, who, to give no disturbance to his welcome visitor, kept his shutters closed till the brood was gone. This kind of attention humanizes and delights the lover of nature.——Of late years many beautiful wall flowers have been raised in Germany, such as crimson with white stripes. These have been originated between the wall-flower and the stock, and well deserve attention.——The great verbena, in England, now is the *Favorite*, with exceedingly large trusses of flowers, of a rich *dark scarlet*.——To destroy mice in a garden, bury pickling jars in the ground, with their mouths even with the surface; pour a little water in them, and the mice will fall in during the night and be drowned.—— Mr. Snow, of Chicopee, Mass., has devoted himself to a speciality, cultivating verbenas alone. The idea is a good one, and might be successfully followed by others. Rhododendrons should be taken up in this way, and every hardy kind demonstrated to be so. The Messrs. Waterer, of England, have done this; they get fifty guineas sometimes for a fine new plant. They have hybridized the Himalayan and American kinds till the variety is infinite. The Belgian rhododendrons, hardy and fragrant, are a great acquisition among us, but we have failed in introducing some of the best of our own country.——The dandelion is very prolific of seeds, as many as two hundred ripening on a single plant. To exterminate them they must be cut very low down, for without this treatment numerous new sprouts appear, and getting rid of them becomes yearly more difficult.——The manufacture of beet-root sugar continues to prosper in France. There is a company established at Dresles, with a capital of a hundred and fifty thousand dollars, dividing 15 per cent. annually. Last year they grew 1200 acres of beet, from which they made sugar and alcohol, and with the pulp fed an enormous herd of animals. The State exacts an onerous tax of two hundred dollars the hectare of two and a half acres.——The waterworks of the new crystal palace, near London, are spoken of on all hands as beautiful in the extreme. The number of jets is nearly 12,000, discharging 120,000 gallons of water per minute; jet succeeds jet, fountains of all kinds sparkle and dash into fantastic forms, and on each hand a vast torrent struggling perpendicularly to the sky, sighing and surging, and panting, like some fierce water god endeavoring to force its way upwards from a subterranean prison, surrounded by a crowd of attendants clustering round its base, and giving solidity to the space he stood

upon. The height is the greatest ever attained in fountains, ascending to the level of the crown of the nave.——Sir David Brewster, in his life of Newton, has discovered that the great philosopher had a taste for gardening, perhaps a new feature in the imaginary picture we form of him. It is fully corroborated by some letters, in which we find him anxiously and critically dilating on the best varieties of apple from which to obtain grafts, and expressing a wise preference for the genuine "red streaks."——Goldfish, as well as others, are attacked by a fungus like the yeast plant, which attaches itself to their scales and finally kills them. The plant is saprelogenia ferox.——A very fine new radish has been introduced into France from China. It swells at the bottom, where its diameter is about two inches; it is from three and a half to four and a half inches in length, and of a clear carmine color.——A most remarkable fact has been discovered by naturalists in Madeira, of the frequently wingless condition of the beetles; out of 550 coleoptera there collected, 200 are more or less without wings. As in the caverns of North America and Styria, the beetles, &c., which inhabit these eternally dark recesses, are eyeless, inasmuch as sight would be useless to them, so on the small island of Madeira the beetles are wingless, because powers of flight would be of little use or injurious to them, as when once on the wing they would be liable to be blown out to sea and lost.——The number of sheep in the British islands is estimated at 35,000,000, worth two hundred and fifty millions of dollars! producing 157,000,000 pounds of wool, worth fifty millions of dollars anually; this is independent of 60,000,000 pounds imported each year.——The last remedy for the curculio is to smoke the trees with tobacco on the first appearance of the enemy. Smoke them well night and morning, for one week. Very probably the best remedy proposed.——We found Mr. Hovey, of Boston, in possession of a number of new varieties of the strawberry, and among them the "Sir Harry," which we were not aware had been received in this country. He has also "Admiral Dundas," of which it is said 18 weigh a pound. "Sir Charles Napier" is also a much esteemed variety. When we come to the description of places around Boston, we shall notice several of Mr. Hovey's novelties.——They had a discussion respecting the strawberry at the Fruit Growers' Convention of Western New York, which is well reported in *Moore's Rural New Yorker* of July 26th. The cherry also claimed a large share of attention.——The *Quercus graminitia* produces edible acorns quite equal to chestnuts. These were much eaten by the ancients, and were believed by them to fatten the tunny-fish on their passage from the ocean to the Mediterranean, and are the bellotas which Teresa, the wife of Sancho Panza, gathered in La Mancha, where they still grow in the greatest perfection, and sent to the duchess.——Spain has at last attempted a reform in her agriculture, and in place of her old bull-fights has had a cattle show, which is to be triennial. A prize was awarded to an English Durham bull. With great capabilities, Spain remains in the rear in the march of improvement, though symptoms of her awakening are becoming apparent in railroads and manufactories, and at last the cattle show for the bull-fight.——Lime-water poured freely on the nests and burrows of ants will cause them to flit, if it does not kill them. Arsenic in a solution of sugar and water is a certain remedy, but care must be taken that it is not accessible to other living things; therefore, cover the saucer with a slate and a stone, leaving a couple of pegs between the slate and saucer to let the ants in freely. By using honey and water you may trap them by myriads as the honey holds their feet like bird-lime.——A new white grape, a seedling of the Black Hamburgh, is spoken of favorably. It was raised by Mr. Carpenter, near Birmingham, is a distinct grape, much flattened at the eye, and of a clear amber color and rich flavor. Mr. Beaton thinks the pollen of the sweet water grape produced this seedling, and that it is well worth growing. Not yet named.——The hollyhock continues to grow in favor abroad. Instead of the tall single flowered varieties, we have them now with close spikes of beautifully formed, compact, double flowers, with clear colors ranging from fine white to nearly black, and lasting, as all double flowers

do, much longer than single ones. They seem to be favorites in Boston.——A plant may lose half its weight by drying, and yet be restored by care. De Candolle has recorded an instance of a *Sempervivum cæspitosum*, which had been placed in a herbarium for eighteen months, and from which he afterwards detached a living bud and reared a plant. But the tenacity of vegetable life is best exhibited in the property which seeds possess of retaining their powers of germination, after having been exposed to very considerable degrees of heat and cold. Some, also, which have partially germinated, may be again dried and kept for months, without losing the power of germinating afresh, although they are sensibly weakened by such treatment. The revival of plants among the cryptogamic tribes, after a very long suspension of the vital functions, is well authenticated.——Trees are the indispensable objects in scenery; indeed, they are the essence of a true landscape. Scenery unadorned by trees is like a beautiful bird stripped of its plumage; creation is there, but it is without its usual charms.

Answers to Correspondents.—Prepared Insects, of the several parts of the United States, are desired by A. Z., for friends abroad. We can recommend a neighbor of our own, who, in his leisure moments after daily toil, collects and prepares with taste and accuracy most of the insects, butterflies, &c., of this part of the country, and who will be most grateful for orders, which he fills at very moderate prices.

Packing Plants (W. H. Alexander) is an art few are masters of, and yet so important that, as our friend Mr. Barry once wrote, "he who cannot pack properly had better have nothing to do with the nursery business;" yet it is a very simple affair. Not merely "three days" but months sometimes elapse before plants reach their destination; and if properly packed, with complete success. A practical friend has promised us a complete essay on the subject for an early number.

Protection to Plants in Winter, by W. E., not inserted, and will be returned if requested.

An Earnest Follower of Horticulture.—We should be glad to receive specimens of the "white worm," though we strongly suspect your plants are infested by the red spider, which is often more destructive to verbenas in the open air than many imagine.

A Box of Pears, with a few grafts, has been received from some kind friend, but unaccompanied by any letter by which to designate the donor.

(Joseph Longworth, Esq., Cincinnati.) Your beautiful running vine is Ampelopsis bipinnata, or the Pepper Vine of the Rocky Mountains. It is certainly one of the most ornamental runners we have ever seen, and will, we hope, be generally disseminated.

(S. W. H.) Yes; you will find a note to that effect in the third volume of Michaux, page 37: "An ash leaf, rubbed upon the swellings caused by mosquitos, removes the itching and soreness immediately. The same effect is produced on the poison occasioned by the sting of the bee. The leaves and branches of the white ash are said to be poisonous to serpents, and the leaf to cure their bite. No rattlesnakes are found in white-ash swamps."

Forsyth's Dressing.—(A. T.) The dressing for large wounds in trees is as follows: One bushel of fresh cow-dung is intimately mixed with half a bushel of lime rubbish, as from ceilings or walls, the same quantity of wood ashes, and one-sixteenth of a bushel of river sand, all finely sifted. The edges of the wound and surface being made perfectly smooth, the composition is laid on about one-eighth of an inch in thickness, care being taken to thin it off gradually at the edges. A powder of wood ashes, and one-sixth of the same quantity of burnt bones, is then applied, with a dredger, till the whole is covered, allowing it to remain half an hour to absorb the moisture. More powder is then rubbed on with the hand, till the whole acquires a dry, smooth surface. The composition is best applied in a

liquid state, and may be made of the proper consistence by mixture with chamber lye, or soapsuds, and laid on with a brush. The surface will want occasional examination, to see that the plaster is not removed by the growth of the young bark. The object is to apply some varnish or cement which shall not be so thick as to impede growth at the edge, or shall not be of such an irritating nature as to affect the neighboring living tissues, but which shall effectually prevent the admission of moisture, and the growth of injurious fungi. For small cuts use the dissolved shellac.

(Edward Aborn, South Seekonk, Mass.) We have submitted your four leading questions to the proper authorities in each, and are happy to supply you with answers that, on trial, will prove satisfactory:—

WHAT ARE THE TWELVE BEST VARIETIES OF AZALEA INDICA?—BY CRITIC.

The varieties of Indian or Chinese Azaleas are now so numerous, that to select twelve only, "doctors will disagree," yet I do unceremoniously say, that for all decorative purposes, the dozen is ample.

Alba maculata, large, pure white, spotted with greenish yellow.
Beauty of Europe, blush white, striped with dark red.
Duke of Wellington, bright scarlet crimson.
Lateritia, salmon—a dwarf variety, and shows best when grafted.
Maitlandii, pure rose and white striped; is also a dwarf kind, and should be grafted on a stronger sort.
Narcissiflora, a very double pure white.
Optima, rosy salmon.
Pride of Dorking, dark crimson purple.
Rubro-pleno, very large, double orange scarlet.
Splendens, salmon; not so handsome in shape, but very abundant of bloom.
Vittata punctata, spotted salmon white and rose.
Vesta, pure icy white—dwarf habit. Amongst these you see some of our oldest varieties, with a sprinkling of the very rarest, omitting Amæna, Bealii, and some other of our nurserymen's crack sorts, which are, for all useful purposes, really useless, except for the attraction of their high prices.

Twelve Best Camellias—By A.—So varied and beautiful are the floral characters of this plant, that I fear all tastes will not unite on a dozen; very few, comparatively, of the new and imaginary beautiful kinds, are placed among what I call standards.

1. Alba pleno, the old double white.
1. Candadissima, pure white; desirable for its late blooming properties.
2. Elegans (Chandler's), very large, irregular flower; dark rose, interior petals white.
1. Fimbriata, fringed white.
1. Imbricata, crimson, spotted with white.
1. Ladies' Blush, beautiful blush; plant of rather loose habit.
3. Landrethii, beautiful pink; requires rich culture.
2. Lowii, dark crimson.
3. Mrs. Cope, rose white, spotted with pink.
2. Queen of Flowers, very handsome form; rosy crimson.
3. Sarah Frost, crimson; one of the earliest bloomers—first rate in all its parts.
3. Wilderii, rosy pink; exquisite form.

No. 1 are Chinese sorts, No. 2 are English, and No. 3 are American.

Twelve Pelargoniums—Show Kinds—By A.—The Pelargonium is now subdivided by florists into several branches, such as Fancies, Fragrant Sorts, Spotted or French Sorts, &c.; good collections consist of sorts that bloom nearly the whole year. Those named are the very

finest, selected from those that have taken prizes before the Pennsylvania Horticultural Society, in 1856.

AJAX, dark crimson and pink.

BUTTERFLY, rose and crimson.

FORGET-ME-NOT, bright scarlet crimson.

GENERALISSIMO, large, scarlet crimson, with salmon lower petals.

LEONORA, rich, waxy pink.

OCELLATUM, orange, crimson, and pink.

ONDINE, blush white, striped with crimson.

PRINCE OF ORANGE, bright scarlet.

SARAH ROSE, each petal with a crimson spot.

SNOW FLAKE, pure white, with dark velvet spot in upper petals.

VULCAN, dark crimson upper petals, bottom rose.

WILMER'S SURPRISE, rosy carmine; nothing similar in shape or color; very showy.

These are all English sorts. Plants at our May meeting have been two feet high and nine feet in circumference. Buist is the leading grower, and frequently imports them at a guinea per plant.

Twelve Fuchsias—By P.—The dozen takes them all; the balance are worthless where the following can be had:—

ARIEL, CLIO, KING, PRINCE ARTHUR, light colors, with purple or red corollas.

ALPHA, GLORY, HENDERSONII, OMEGA, PERFECTION, PRESIDENT, PRINCE ALBERT, scarlet colors, with crimson, purple, or blue corollas.

QUEEN VICTORIA, red, with white centre or corolla.

MAGNOLIA GRANDIFLORA.—Frequent allusion has been made in this journal to two fine trees of the evergreen magnolia, which flourished eight miles north of Philadelphia, without any particular care or shelter. Considerable curiosity has been manifested to ascertain how they withstood the past winter. We regret to state that they were both utterly killed. Smaller specimens in the neighborhood, while they lost their leaves, survived the unparalleled cold and are looking well. We think it established that Baltimore is the most northern limit for its successful growth in the open ground, and even there it is sometimes injured. A few degrees south of that place it flourishes in brilliant beauty.

THE DEODAR.—The Cedrus Deodara has not proved sufficiently hardy at Philadelphia and north of it, to be any longer a tree to plant in quantities. In consequence, *now* is a good time for southern planters to lay in a supply. We saw at the Parson's nurseries large numbers which it was said would be sold a bargain. They are injured at the top, but would soon recuperate in a genial atmosphere.

THE LATE WINTER.—Numerous communications respecting the effects of the late winter have reached us. From the number we have selected several which have been published lately, and have to regret that space precludes the insertion of all. One in particular, from our valued correspondent George L. Taylor, Esq., of Chicago, Illinois, we should have been glad to copy. He says: "I, for one, am not discouraged, though we fared badly here with our fruit-trees. The motto of the arboriculturist should ever be, 'Nil desperandum.' The Garden City, each recurring spring, looks and becomes more worthy of the name, and that the *Horticulturist* has within the past two years more than doubled its list of Chicago subscribers, evinces a more settled purpose and growing taste in these matters, which are sources of congratulation to every friend of the cause and lover of his country."

THE PEAR CROP, &c., writes a valued correspondent, is light in Rochester, N. Y., and vicinity. The same remark applies here, and in Boston, though Mr. Hovey's fine trees have more than an average. The trees flowered well in most neighborhoods, but much of the fruit fell before it was fully established. Mr. Wilder's extensive collection will produce rather more than half a crop. We should say, after an extensive tour, that pears this year would nowhere be as abundant as was hoped, and the peach crop poor.

THE FOREST-TREES OF AMERICA, by R. U. Piper, M. D., Woburn, Mass., is the title of a quarto livraison well printed, which we picked up in Boston the other day. It appears to us to aim at describing many things which have been described before; the *Horticulturist*, old and new, is quoted extensively; the pictures are well drawn and printed, but we do not yet quite discover its aim or drift.

THE FLOWER GARDEN, OR BRECK'S BOOK OF FLOWERS, is a new edition revised and enlarged of the excellent Boston Seedsman and Cultivator, Mr. Joseph Breck. It contains much valuable information of a practical kind, and may usefully be employed as a guide.

H. A. DREER, Seedsman, 117 Chestnut St., Philadelphia, advertises seeds suitable for the season. Especially he recommends his Extra Pansies, which took the premium in April last, and have been saved with care.

TRANSACTIONS OF THE CONNECTICUT STATE AGRICULTURAL SOCIETY, 1855.—This well printed and well written volume of 350 pages, has been placed before us, by Henry A. Dyer, Esq., of Hartford, Corresponding Secretary.

Connecticut deserves every honor for having been the first American State to set apart a fund for the maintenance of free schools, thus inaugurating a policy of the deepest moment, which has been followed throughout the Union; it was also the first to urge the establishment of a Normal School, for the education of teachers; and the first to make provision for the teaching of the Deaf and Dumb. Education, indeed, has been her wealth, and we now see its results in increased attention to the culture of the earth; her citizens are pioneers everywhere; as members of useful Boards in other States to which they emigrate they take the lead in agriculture, and are rarely in the rear. The perusal of these *Transactions* has afforded us great pleasure. Mr. Huntingdon, their late President, has contributed his Address, a most lucid and agreeable one. Altogether this volume is creditable to its authors, and we could wish it may be perused in other States as well as at home. The addresses delivered before these societies are wells of thought and information; they form a new species of literature, engaging the thoughts and experiences of some of our wisest men, so that *Transactions* which might be thought, on a casual sight of such volumes, to be dry and dull, are among the best reading our presses produce. The work under consideration is not a whit behind its now numerous compeers.

PAMPHLETS AND CIRCULARS RECEIVED.—List of Premiums of the Brooklyn Horticultural Society for September Exhibition, September 17, 18, and 19, 1856.

Fourth National Exhibition of the National Agricultural Society, at Philadelphia, October 7th to 10th. Fourteen thousand dollars offered in premiums.

List of Premiums and Regulations of the Sixth Annual Exhibition of the Pennsylvania State Agricultural Society at Pittsburg, Sept. 30, Oct. 1, 2, and 3, 1856.

Premiums and Regulations for the Seventh Annual Fair of the Ohio State Board of Agriculture, at Cleveland, September 23, 24, 25, and 26, 1856. Competition open to other States.

List of Premiums of the St. Louis Agricultural Association, to be held at St. Louis, September 23, 1856.

Charter, Constitution, and By-Laws of the St. Louis Agricultural and Mechanical Association.

Annual Report of the President of the Ohio State Board of Agriculture of the General Assembly of Ohio, for 1855. Chillicothe, Baker & Miller, Printers.

Wholesale Catalogue, for Autumn of 1856 and Spring of 1857, of Ellwanger and Barry, Rochester, New York.

Descriptive Catalogue of Fruit and Ornamental Trees, Shrubs, and Plants, cultivated and for sale by Hubbard and Davis, at the Detroit Horticultural Garden.

Wholesale Catalogue of ditto.

Descriptive Catalogue of Strawberries, comprised in the collection of Wm. R. Prince & Co., Flushing.

Catalogue of the Fruit-Trees, Plants, &c., for sale by C. B. Swasey & Co., Yazoo, Miss., wholesale.

Premium List of the First Annual Fair, to be held in Columbia, S. C., 11th to 14th of November.

Cheap Glass Structures.—The ensuing number will contain some illustrations of a cheap glass structure which has been built in Belgium for sixty cents a running foot, the most economical we have ever heard of. It is a subject of extreme interest to discover a mode of having cold orchard and grape houses at a moderate cost; they may be attended almost without expense when the plants are established, so that the man who goes out to daily labor may grow his ton of Black Hamburghs and reap a reward proportionate to his intelligence. His wife, if there was no other assistance, with the least exertion, could regulate the ventilation, and shut it up in high winds or during rain; but there are hundreds who work at home, who could obtain an income equal to that from a small farm by a simple grapery. At the latest exhibition in London, the prizes for grapes were taken from all the expensive houses, by a gardener who built a small shed for growing *vines* for sale; a few of them were left to run over the structure, as will be more fully detailed in our next number, with a neglected little border and but little attention.

It is the season now when all will be looking about how to protect their valuable plants, and to facilitate this object, we give the dimensions of a complete pit of very simple construction, which we know to have produced a succession of bloom that shamed some finer structures.

It is in form something like the pit described in the April number, page 195, but has no flue, and from it the plants are taken to a little conservatory, made by simply inclosing a portion of the piazza communicating with the drawing-room, as fast as they appear likely to bloom. It is built of one and a half inch plank made double, and the space between the two sides filled with tan, which is cheaper than manure, renewing it every two or three years. Charcoal, where it is to be had cheaply, would answer equally well.

DIMENSIONS.		DIMENSIONS.	
Length of the outside .	27 ft.	Breadth of the inside . .	5 ft. 8 in.
Breadth " " .	8 ft.	Height in front " . .	4 ft. 6 in.
Height in front " .	3 ft. 6 in.	" back " . .	6 ft. 8 in.
" back " .	7 ft. 6 in.	Outside front above ground	1 ft. 8 in.
Length of the inside . .	24 ft. 4 in.	" back " "	4 ft.

Probably another foot in breadth, making 9 feet, would be preferable.

It fronts S. S. E. with the door of entrance at the W. S. W. end, which in winter is closed,

in addition to the door, with mattings of straw. There are 8 sashes of 6 by 8 glass, with straw mats, and half-inch board covers.

There is one shelf on the interior front, running the whole length for small pots, and behind, three shelves of half the length of the pit, to allow room for the largest plants to stand on the ground.

This pit should be drained in some way, say by digging down to sand, but if that is impracticable, dig one or more holes and fill them with broken stones, to keep the bottom dry.

Again, as to graperies: Lean-to houses are considered better adapted for *forcing-houses* than those having *span* roofs, not so much in respect to the quantity of light which passes into them, as in their longer retention of the heat which enters with light, and which, as every gardener knows, escapes more rapidly from houses having glass on all sides, than from those having only one side, and that facing the south. To carry out, says an authority on this topic, the ripening of fruit to its highest point of excellence, the leaves, from their earliest development, must be kept fully exposed to light, to insure the healthy action of their organs in furnishing an abundant supply of the necessary food for the fruit while in a young and growing state; and as the fruit approaches maturity, light, and a more full exposure to air than what may even be necessary during the period of growth, should be admitted, to enable the vital force within the fruit itself to perform the changes requisite to give flavor and proper consistence to its component parts. To effect this, forced fruits should be allowed to ripen slowly, that the processes whereby their characteristic qualities are obtained, may be formed without being hurried, and the fruit consequently may attain its fullest development of size, color, and flavor.

Pears in New Jersey.—E. B. Edwards gives us as his experience of pears, in the neighborhood of Haddonfield, N. J., as follows:—

Duchess d'Angouleme (dwarfs), prolific bearers.
Louise Bonne de Jersey, " " "
Honey Pear, ripe in August (dwarfs), prolific bearers.
Belle Lucrative, " " "
Doyenné Robin (first season), " very full of pears.
" Boussock, " moderate bearer.
Glout Morceau (five years from bud), dwarf; no fruit.
Doyenné Goubault, dwarf; fair show of fruit.
Columbia, dwarf (five years from bud), no fruit.

I have between forty and fifty kinds of dwarf pears, about half of them obtained four years ago; the remainder last fall. The Doyenné Boussock, described by Downing as Gray Doyenné, we kept till Christmas, and thought it unsurpassed, in flavor, by any pear.

The Michigan State Agricultural Society will hold its eighth annual fair at Detroit, Sept. 30th, Oct. 1st, 2d, and 3d. We have examined the premium list which embraces a wide range of subjects, and is on a liberal scale. The Michigan Society is very far from being on the "old fogy" list alluded to with justice by Jeffreys, in August.

Lombardy Poplar.—A gentleman of Illinois writes us as follows: "Please record my vote for Mr. Allen, on the Lombardy Poplar question, with an express restriction, by way of amendment, that planters are not to set them out *à la* ten-pin alley. There is no tree, native or foreign, that will flourish in this climate, and exactly fill the place of the Lombardy Poplar for a break in the scenery of low, flat tracts. When set from cuttings, as it ought to be, it will never sucker. The L. Poplar man has lazily planted *a sucker*, grown from a tree that suckered by reason of its lower buds not being removed from the cutting, and which has naturally suckered again.

THE EXHIBITIONS.—The period of exhibitions is upon us. Our readers will not forget the gathering of the American Pomological Society, at Rochester, on the 24th of this month, and at the United States National here on the 7th of October, we expect to meet many friends. As a matter of reference, we insert a table of the dates of the several shows in the various States, and the names of the Corresponding Secretaries:—

NATIONAL AND STATE SHOWS FOR 1856.

	Cor. Secretary.	Place.	Time.
United States,	Wm. S. King,	Philadelphia,	October 7 to 10.
American Pomological,		Rochester, New York,	September 24.
Alabama,		Montgomery,	November 11 to 14.
California,	Warren,	San Jose,	October 7 to 10.
Canada East,	Wm. Evans,	Three Rivers,	September 16 to 18.
Canada West,	J. P. Litchfield,	Kingston,	September 23 to 26.
Connecticut,	Henry A. Dyer,	New Haven,	October 7 to 10.
Georgia,	J. W. Lewis,	Atalanta,	October 20 to 23.
Illinois,	J. A. Kennicott,	Alton,	September 30 to October 3.
Indiana,	J. A. Wright,	Indianapolis,	September 20 to 25.
Iowa,	M. Warden,	Muscotine,	October 8 to 10.
Kentucky,	W. C. Lyte,	Paris,	September 30 to October 4.
Maine,			October 28 to 31.
Maryland,	Samuel Sands,	Baltimore,	October 21 to 24.
Michigan,	J. C. Holmes,	Detroit,	September 30 to October 3.
Missouri,	J. S. Miner,	St. Louis,	September 23.
New Hampshire,	J. O. Adams,		October 8 to 10.
New Jersey,	J. H. Frazee,	Newark,	September 10 to 12.
New York,	B. P. Johnson,	Watertown,	September 30 to October 3.
North Carolina,	T. J. Leman,	Raleigh,	October 14 to 17.
Ohio.	George Sprague,	Cleveland,	September 23 to 26.
Pennsylvania,	R. C. Walker,	Pittsburg,	September 30 to October 3.
South Carolina,	A. G. Sumner,	Columbia,	November 11 to 14.
Tennessee,	E. G. Eastman,	Nashville,	October 7 to 10.
Vermont,	J. A. Beckwith,	Burlington,	September 9 to 12.
Virginia,	F. G. Ruffin,	Richmond,	October 28 to November 1.
Wisconsin,	G. O. Tiffany,	Milwaukie,	October 8 to 10.

STRAWBERRIES.—The *Cincinnati Valley Farmer* rejoices greatly over the strawberry business of this season, and says, in June: "Mr. Culbertson, alone, is now bringing daily into market one hundred bushels of strawberries."

BROWN AND GRAY.—In our last "gossip," we gave a short notice of Robert Brown, the great botanist; this recalled to the memory of a friend, the following happy *jeu d'esprit*, written by a lady on the closing of Dr. Gray's botanical lectures at the Odeon, Boston:—

"Though Flora's bright colors her children adorn,
Her apostles are clad in more sober array;
In England, they boast nothing better than *Brown*,
In our happy land, nothing brighter than *Gray*."

HERMANN, MISSOURI, June 25, 1856.

J. J. SMITH, Esq.—In the May number of your *Horticulturist*, I found a notice to the Corresponding Secretaries of the horticultural societies, to send in their names, as you intend to publish a list of them. This seems to me to be an excellent idea, as it will make it much easier for all to send each other such notices and communications as may serve to promote the common cause. We have reorganized a society here, to promote the culture of the grape, pomology, and horticulture. Our means are small, yet all the members take a lively interest in the matter, and I hope we shall do something in time. I think this country peculiarly adapted to fruit culture, and the culture of the grape, in which we have engaged pretty extensively. Although the Catawba has failed us several seasons, we have several other varieties which, I think, will prove very valuable, and make wine growing the most profitable business we can engage in. We make an excellent wine here from the Catawba, of which I shall take the liberty of sending you a sample next fall, as, also, some specimens of apples. The Catawba is much subjected to mildew and rot, but will, nevertheless, even in

the worst season, always pay the diligent cultivator for his trouble; we have had examples here even of extraordinary yields. The vines suffered much last winter, and, in some vineyards, were killed to the ground, but the grapes we have look very fine. Our fruit-trees also suffered much, but I hope the most of them will live. I have an orchard of 1,500 bearing trees, and am confident, from long experience, that apples and peaches succeed here better than in most parts of the Union. From four trees of the Yellow Bellflower, planted in 1847, I gathered, last fall, 49 bushels of such apples, as would have done your heart good to look at, after making two barrels of cider from the apples that dropped before the final gathering. About peaches, if you will pardon my gossiping, I can tell you, that a friend from Jersey declared that they fairly beat all New Jersey peaches he had ever seen. This will serve to show what we can do in peach culture. The pear also promises well, but has not been tried long enough yet. The Bartlett, Beurré Bosc, Frederick of Wurtemberg, Charles of Austria, Louise Bonne de Jersey, Beurré Capiaumont, and St. Germain, produce very fine fruit, and are regular and abundant bearers. Plums, nectarines, and apricots, I have given up, as the little "Turk" destroys them all. The Mayduke, Early Purple Guigne, Belle de Choisy, and Black Tartarian Cherries, all do well here, but all the other Heart Cherries I have tried are poor bearers. We can also raise all the smaller fruit in abundance, except gooseberries, which mildew. Wishing you and your valuable journal (which, by the by, is worth four times the money it costs) all possible success,

I remain yours, respectfully,

GEORGE HUSMANN,

Cor. Sec. of Western Fruit Growers' Asso. and Hort. Soc., at Hermann, Gasconade Co., Mo.

[We are pleased with Mr. Husmann's letter, and shall hope to hear from him again, regarding fruit culture in Missouri.—ED.]

ALTON, ILLINOIS, July 11, 1856.

DEAR SIR: The season has now so far advanced, that the effect of the winter's cold is plainly discernible. Much more injury has been done than at first sight appeared. One fact is plainly proven. The condition of a tree, as to growth, has much to do with its ability to stand excessive cold. Trees that were very vigorous, that made a fine growth, and also those that made scarce any, escaped, while those that made a partial growth—that is, those that seemed intermediate—have been killed.

Is it not for this reason: the strong growers, full of vigor, ripened and perfected their wood; the feeble growers, making but little effort, were not so filled with sap as to be affected, going to rest early, from their inability to make further effort, while the medium grower was caught by the cold before it had accomplished its purpose? The result is as stated, and that, too, without regard to sorts. Brinklé's Oregon Raspberry is a great acquisition. It has stood the severe cold without injury, is very prolific, and of fine flavor. The drought has injured all our early apples, rendering them small, and comparatively worthless.

YOURS, JAMES E. STARR.

Horticultural Societies.

PENNSYLVANIA HORTICULTURAL SOCIETY.—The stated meeting of this Society occurred on Tuesday Evening, July 15, E. W. Keyser, Vice-President, in the chair. Premiums awarded on this occasion were as follows:—

By the Committee on Plants and Flowers.—*Petunias*—for the best display, and the second best display, to J. J. Habermehl, gr. to J. Lambert. *Collection of twelve Plants*—for the best, to Chas. Sutherland, gr. to John Anspach; for the second best, to Thos. Robertson, gr. to B. A. Fahnestock. *Collection of six Plants*—for the best to Mark Hill, gr. to M. W. Baldwin. *Specimen Plant*—for the best, to Chas. Sutherland, for *Clerodendrum fallax*; for the second best, to John Pollock, gr. to James Dundas, for *Adamia versicolor*. *Table design*—for the best, to H. A. Dreer. *Baskets*—for the best, to J. J. Habermehl; for the second best, to Mark Hill. *Bouquets*—

for the best pair, to J. J. Habermehl; for the second best, to H. A. Dreer. A special premium for a fine collection of double Hollyhocks, from Thos. Richardson, New York.

By the Committee on Fruit. *Grapes*—for the best grown in pots, to Lichard Mathews, gr. to Jos. S. Lovering; for the best three bunches of a black variety, to James Bonner, gr. to C. P. Fox; for the second best, to Chas. Sutherland, gr. to J. Anspach; for the best of a white variety, to James Bonner; for the second best, to John Reilly, gr. at Insane Asylum. *Apricots*—for the best twelve to John McLaughlin, gr. to Isaac B. Baxter. *Pears*—for the best, to the same. *Gooseberries*—for the best, to the same; for the second best, to Wm. Grassie, gr. to John Tucker. *Raspberries*—for the best and for the second best, to the same. *Special Premiums*—one dollar each for Red Currants and for Black Currants, to Wm. Grassie, and for White Currants, to A. L. Felten. Also, for a fine display of various fruits, a premium of three dollars to A. L. Felten.

By the Committee on Vegetables. *Tomatoes*—for the best, to James Jones, gr. at the Girard College; for the second best, to Wm. Grassie; for the best display by a market gardener, to A. L. Felten. A special premium of one dollar, to James Miller, gr. to R. Cornelius, for four fine specimens of the Lord Sherbourne Cucumber.

Objects shown.—*Plants*—From J. Anspach's collection.—Begonia Prestoniensis, Cuphea platycentra, Vinca rosea, V. oculata, Hydrangea hortensis, H. japonica, Rondeletia speciosa, Tabernæ montana coronaria, Nerimbergia grandiflora, Fuchsia Fair Rosamond, Clerodendrum Kæmpheri, and C. fallax.

From B. A. Fahnestock's. Clerodendrum Kæmpheri, C. squamatum, Fuchsia Macbeth, F. Mad. Sontag, Medinilla magnifica, M. urophylla, Achimenes venusta, A. grandiflora, A. Boothii, Gloxinia rubra, G. imperialis, and Hydrangea hortensis.

From James Dundas's. Cuphea platycentra, Nerimbergia gracilis, Torrenia Asiatica, Clerodendrum Devonianum, Begonia semperflorens, B. nitida, Vinca alba, V. rosea, Isoleria Dicaisneana, Adamia versicolor, Justicia bicolor, Fuchsia Darling, and F. Sidonea.

From M. W. Baldwin's. Pentas carnea, Ixora coccinea, Fuchsia Mad. Sontag, F. Kerrii, Allamanda nereifolia, and Mussendra frondosa. *New.*—Petinca superba.

From John Lambert's. Two extensive displays of Petunias, comprising seventy pots.

By A. L. Felten. A Cereus grandiflorus.

From Thomas Richardson, New York. Some forty cut flowers of Double Hollyhocks.

Designs, Baskets and Bouquets.—By Henry A. Dreer.—A large table design.

By J. J. Habermehl.—A fine basket and a pair of bouquets.

By Mark Hill.—A basket.

By H. A. Dreer.—A pair of hand bouquets.

By R. Kilvington.—A bouquet.

Fruit.—From J. S. Lovering's.—Nine pots of Grape-vines in full bearing.

From John Tucker's.—A very large Pineapple in a pot. Raspberries, two kinds, and Black Currants.

From John Anspach.—Grapes—three bunches Black Frankenthal and three white Frontignac.

From C. P. Fox's.—Grapes—three bunches of each, a black and white variety.

From the Insane Asylum.—Grapes—white and black varieties.

From Isaac B. Baxter.—Apricots—twelve Baxter's seedling. Pears—moule bouche. Gooseberries—three kinds. Wilder and Red Seedling Raspberries, and Black Currants.

From A. L. Felten.—Raspberries—Antwerp and early blue. Gooseberries—three varieties. Large Black, White, and Red Currants. Early harvest Pears. Mulberries and Cherries.

Vegetables.—By A. L. Felten.—A large and fine display.

By James Jones, Girard College.—Tomatoes.

From John Tucker's.—Tomatoes.

From R. Cornelius's.—Four fine Cucumbers.

By M. S. Wickersham.—Specimens of the Chick Pea—Cicer arietinum.

Genesee Valley Horticultural Society, at Rochester, New York.—The usual June exhibition of the above-named Society, was held at Corinthian Hall for two days, and the display of cut flowers, floral ornaments, and greenhouse plants was equal to former ones. The Strawberries were in perfection, and some forty varieties were shown.

Ellwanger and Barry, H. E. Hooker & Co., Selah Matthews, and George Newland, were the principal competitors.

"Hooker's Seedling" was admired by all, and your readers may be assured that we can boast of a most superior berry in this new seedling. It will rank with "Burrs's New Pine," although distinct from that in character. It is uncommonly juicy and high flavored, a large berry, and a most prolific bearer. I subjoin a particular description of it, only adding that its parentage may be either from the British Queen or Leviathan seedling.

Description.—Very large size, some of the berries measuring five and a half inches, of dark red, almost black when very ripe, with beautiful gloss, form conical, but very frequently flattened at the top and sides in large specimens.

The flowers are perfect, and the vine a strong grower, enduring the severest cold without injury. The fruit is produced for a great length of time, having ripe berries and blossoms upon the same fruit stalk. For four years, during which time it has been cultivated, it has never failed to produce an abundant crop.

The "Hooker's Seedling" will prove a most valuable market berry, it being of a uniform large size, and showy. The premium for best quart was awarded to this berry.

While I deem the "Burrs's New Pine" the very best berry (for flavor) now extant, I am satisfied that all the excellence of the "Hovey's Seedling," "Bicton Pine," "McAvoy's Superior," or any of the best fruits of this class are combined in the "Hooker's Seedling." It is a great acquisition, and is, no doubt, to become a popular fruit.

Ellwanger and Barry, amongst their numerous collection, presented their own "Genesee Seedling" and No. 1, which last is a high-flavored berry. The "Trollops Victoria," an English variety introduced by them, is a mammoth berry of good flavor, and will become much valued for the amateur, and should be in all collections.

Mr. Newland presented, amongst his large collection, the "Chilian Pyramidal," which deserves attention for its high flavor; it is said to be a good bearer, and ranks No. 1.

We can now enumerate to represent—

New York.—"Genesee Seedling," of Ellwanger and Barry; their "No. 1," of Ellwanger and Barry; and "Hooker's Seedling."

Massachusetts.—Hovey's Seedling, Walker's Seedling, Jenney's Seedling, and Bicton Pine.

Pennsylvania.—"Moyamensing" and "Cushing."

Ohio.—"Burrs's New Pine," "McAvoy's Superior." All first class berries.

The Editor of the Horticulturist was looked for here; and with our regrets that he did not come, we shall tell him that in being absent he was the loser.—J. H. Watts.

[We fully coincide with the latter sentiment. How clever it would be for an editor to be ubiquitous.—Ed.]

CHESTER COUNTY HORTICULTURAL SOCIETY.—The stated meeting for July was held in the Society's Hall, on the 12th inst., Vice-President J. H. Bull, Esq., presiding.

Plants and Flowers.—From the collection of Josiah Hoopes, viz: Ten specimen plants of Gloxinias: Begonia parviflora, B. lanceolata, B. Prestoniensis, Ruellia formosa, Russellia juncea, Cissus discolor, Torrenia asiatica, Centradenia floribunda, Nepenthus distillatorius, Lycopodium arboreum, L. denticulatum, Hoya bella, Echites picta, E. Nutens, Acrostichium alcicorne. *New.*—Fuchsia Mrs. Story and Prince Albert, Cephalotus follicularis, Geraniums amazon, and golden chain.

From J. L. Darlington & Co. Fine plant of Fuchsia Empress Eugenia, and a splendid collection of seedling double Hollyhocks. Also, a handsome bouquet.

Fruit.—From J. & M. Bennett's. Red and purple Antwerp and common black Raspberries, red Dutch and black Naples Currants, Kentish, and two seedling varieties of Cherries.

From J. H. Bull's. Orange, Red Antwerp, and Cushing Raspberries.

From S. P. Hoopes's. Franconia Raspberries.

From M. B. Thomas's. Three varieties of Gooseberries.

From Josiah Hoopes's. Raspberries, viz: River's Monthly, Knevett's Giant, Fastolff, Orange, Hudson River Antwerp, Franconia, Cushing, River's Antwerp, Common Red Antwerp, Vice-President French, Ohio Everbearing, Col. Wilder, Thunderer, and Common Black.

Troth's early Red Peaches (forced), and Red Dutch Currants.

Two gentlemen were elected members.

By order of the

PUBLICATION COMMITTEE.

Calendar of Operations.

SEPTEMBER.

BY WILLIAM SAUNDERS.

VEGETABLE GARDEN.—All vacant ground should be turned over, and left in a rough state that it may be pulverized by frosts. Strong loamy soils cannot be profitably cultivated unless advantage is taken of the meliorating and gratuitous fertilizing properties of the atmosphere. A small portion of the subsoil may be annually brought to the surface, in order to liberate and render available any inorganic substances in its composition. Soils of a ferruginous character, especially, require such treatment, and it is of much importance to turn them over occasionally, in order to expose new surfaces and bring the hitherto excluded earths to the action of the atmosphere. Frost is a valuable auxiliary in this matter. In freezing the water expands and the earthy particles are separated, and during the thawing process a gradual crumbling and granulation take place, producing a friability not readily attained by any other means.

There are few soils actually deficient in inorganic materials, were they duly exposed to the air, so that their latent principles of fertility would be rendered active and available for the uses of vegetation.

A further object of much moment, resulting from the exposure of soil to winter frosts, is the destruction it occasions to insects and their larvæ, by disturbing and breaking up their lurking places and nests. This mode of destroying insects is more effectual than is generally supposed. Indeed, when a thorough system of cultivation is pursued, it is seldom found necessary to resort to expedients which are frequently rendered necessary to counteract defective management.

The winter crops should be encouraged towards maturity by frequent cultivation. Celery should be slightly earthed up as it progresses in growth. Some cultivators prefer growing it to its full size before earthing up, others earth up so closely as to injure growth. A medium course is perhaps preferable. When the earthing up is delayed too long, blanching will be imperfect, and size will be gained at the expense of quality.

Lettuce should be planted in frames, for early winter use, a few radish seeds may be sprinkled among the plants.

HARDY FRUIT.—Strawberry plantations may be set out this month. Select plants from healthy vines, and mulch immediately after planting, if convenient. Those potted last month for forcing, should receive plenty of water, and be kept clear of runners.

GATHERING FRUIT.—Pears should be gathered before being fully ripe. All of them are improved when ripened in the house, and many of our best sorts may be ripened to insipidity by hanging too long on the tree. Fruit that is to be kept for months must be very carefully handled; the slightest bruise favors early decay. A good criterion is to gather just as the seeds change to a brown color, which is easily ascertained.

GRAPERY.—If the treatment recommended in former calendars with reference to air and temperature has been fully carried out, the young wood will be well ripened, the best safeguard against rigorous winters. Still keep the house open night and day. Closing up only during heavy rains.

GREENHOUSE.—As the summer flowers wane, and previous to arranging the plants for winter, the house should undergo all necessary repairs. Fumigating strongly with sulphur will completely rout all the spider and bug families. After the plants are taken in, ample ventilation should be given. The house should not be closed until there is indication of frost. The advantage and necessity for cool, low night temperature will, in a few years, be more generally understood. The preserving of a uniform temperature has been the cause of many disappointments in the artificial cultivation of plants. Water must be judiciously applied. The supply must be gradually withdrawn as cold weather approaches, that plants may be better enabled to stand cold without injury. Let the quantity at each application be sufficient to thoroughly moisten all the soil, but lengthen the periods between the applications.

Withhold water from achemenes as soon as the leaves fade. Encourage young calceolarias, and cinerarias by careful watering. Syringe them slightly in the morning. All watering should be done in the early portion of the day. Cuttings of all half hardy greenhouse plants will strike root very readily at this season. Keep them regularly moist but not wet; a small frame with sash is the most convenient mode of propagating. Keep close and shaded during sunlight; remove the shade evening and morning, and open the sash at night.

Chinese Primroses may be shifted into six inch pots to flower. All plants intended for winter flowering should not be over-potted. The more roots the more flowers, or rather, the plants will flower most profusely when the pots are well filled with roots.

Many of the flower garden plants, carefully lifted and potted will afford a show of flowers during winter. Scarlet pelargoniums, salvias, spireas, wiegelas, Forsythia virsidissima are suitable for this purpose; place them in a shady and sheltered spot for a week or two, to encourage rooting.

Hyacinths and other bulbs should be potted early. A friable light turfy soil will suit them well; let the pots be particularly well drained. After potting, cover them with 8 or 10 inches of soil, or coal ashes. Here they will make roots, and when wanted to flower a few can be taken into the greenhouse. A succession of bloom can thus be kept up for many months.

PLANTING TREES.—Those who intend to plant in the fall should immediately attend both to the preparation of the ground and selecting the trees. With regard to the latter, a better estimate can be made of the general habit and health of a plant before the fall of the leaves. It may be necessary to caution beginners against the prevailing error of selecting the *largest* trees. Medium sized trees come up with better roots, are easier handled, less liable to casualties in transportation, and grow faster than those that have been drawn up tall, weak, and unshapely in nursery rows. Old trees have strong roots, and these must necessarily be cut in removing. The tops must then be pruned down, to correspond with this mutilation, in order to secure a healthy start. So that there is nothing gained in the way of size. Even should they live, it is only an eking out a miserable existence for two or three years; meanwhile the smaller tree far exceeds it both in health and height.

The question as to whether autumn or spring planting is most successful, has been often discussed. The arguments favoring autumn planting are based upon the well-known fact that the roots and branches may be separately excited to growth. This is well exemplified in the rooting of slips or cuttings. To favor root formation the cuttings are placed in soil kept warmer than the surrounding atmosphere. In the fall the soil is warmer than the air; the formation of roots proceeds while the branches are dormant; when spring arrives, the balance of the tree being in a great measure restored, growth commences vigorously, and the plant becomes established and able to bear up against summer aridity.

But to insure these good results, planting should be proceeded with *immediately after the leaves have fallen;* if delayed beyond October success will be less certain.

Holes should be made 6 or 8 feet in diameter and 14 to 18 inches deep. In clayey subsoils, breadth should be considered of more importance than depth. A portion of well pulverized soil should be in readiness when planting season arrives. It is poor economy to pay a couple of dollars for a tree and then begrudge a shilling for planting it.

KNIGHT'S EARLY BLACK.